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ABSTRACT

A project sought to identify the traits and pedagogical expertise needed by vocational educators who work in business and industry and to determine whether current vocational teacher education is appropriate preparation for them. The following subjects were asked to describe on a mailed questionnaire the excellent vocational instructors who work for them: 500 supervisors in secondary schools (250 responses), 500 supervisors in postsecondary schools (266 responses), and 500 supervisors in business and industry (204 responses). Ratings were based on Spectrum I and the Adult Personality Inventory, involving the following variables: extroverted, adjusted, tough minded, independent, creative, enterprising, caring, adaptive, withdrawn, submissive, uncaring, nonconforming, sociable, assertive, practical, aesthetic, social, competitive, structured, accomplishment, recognition, power, and affiliation. Results indicated that excellent instructors in all three settings were more similar than dissimilar but that they were rated significantly different from the general population on most of the variables. In another part of the study, vocational teacher educators from 21 institutions (75 usable responses) were asked to rate how important 25 competencies are to their graduates and the extent to which each competency, identified by the American Society for Training and Development as a model for good human resource development practice, is covered in coursework. Twenty competencies were rated at least somewhat important, but only seven competencies were said to be covered at least adequately. (86 references) (CML)

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PRIVATE SECTOR INSTRUCTORS: THE NATURE OF EFFECTIVE VOCATIONAL EDUCATORS WORKING IN BUSINESS AND INDUSTRY

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PRIVATE SECTOR INSTRUCTORS: THE NATURE OF EFFECTIVE VOCATIONAL EDUCATORS WORKING IN BUSINESS AND INDUSTRY

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TABLE OF CONTENTS

Preface i

Introduction 1

Need for Training Professionals 2

A Review of Research on Knowledge and Skills Needed by Vocational Educators Working in Business and Industry 4

The Training and Development Profession 4

The Need for and Practicality of Establishing a Common Body of Knowledge 6

Knowledge and Skill Required for Success 12

Adult and Continuing Education 12

Vocational Education 18

Training and Development 20

Summary and Conclusion 32

Characteristics of Excellent Vocational-Technical Instructors Working in Business and Industry and in Secondary and Postsecondary Schools: An Analysis of Supervisor Ratings of Instructors 35

Introduction 35

Purpose of the Study 36

Method 37

Results 42

Summary and Conclusions 55

Appropriateness of the Content of Vocational Teacher Education Programs for Preparing Tomorrow's Business and Industry Trainers 58

Introduction 58

The Problem and Purpose of the Study 59

Procedures 60

Results 64

Conclusion 74

Implications for Vocational-Technical Teacher Preparation 76

Recruitment and Selection 78

Curriculum 79

References 81

PREFACE

Vocational teacher education programs have traditionally prepared teachers for work in secondary schools in service areas such as agriculture or business education. However, vocational teachers work primarily in three distinctly different settings: business and industry, postsecondary schools, and secondary schools. Vocational training in business and industry has become increasingly prominent; this sector is arguably the largest provider of adult education in the United States. Private sector demand for training and development professionals is high, and there is corresponding interest on the part of many students in vocational teacher education programs geared toward work in the business community. However, limited consideration has been given to the appropriateness of vocational teacher education programs for preparing students for careers in the private sector.

This report presents findings from a two-year project to assess the professional knowledge (i.e., pedagogical expertise) and traits needed by vocational educators who work in business and industry settings and to determine the appropriateness of current vocational teacher education programs in providing this knowledge base.

During the first year of the project, two studies were conducted to collect information regarding the knowledge, skills, and traits needed by vocational educators working in the business community. First, a comprehensive review of research was conducted to determine what is known regarding the knowledge and skills deemed necessary for success. The second study was a survey of private sector training managers conducted to develop a profile (i.e., of personality traits and motivation factors) of trainers considered to be excellent.

During the second year of the project four additional studies were conducted. Profiles were developed of vocational educators who were described as excellent by their superiors and who worked at the secondary level and two-year postsecondary institutions. These profiles were then compared with the profile of vocational educators who were described as excellent by their superiors and who worked in the private sector. The extent to which vocational teacher education programs include appropriate knowledge and skill training to prepare vocational educators successfully for training positions in

business and industry was determined based on information gleaned from first-year activities and a survey of vocational teacher educators.

The roles of vocational teachers in business and industry are distinct in many ways from the roles of vocational educators in school settings. The nature of the knowledge, skills, and experiences provided through vocational teacher education programs should be consistent with these new roles. The studies conducted during this project provide valuable information that should be useful in this effort. This report provides a more thorough description of the nature of effective vocational educators working in business and industry than has heretofore been available.

INTRODUCTION

The American Society for Training and Development (ASTD) has declared the learning deficit in our workforce to be as threatening to the economy as our monetary deficit. Because of previous economic success, the U.S. has not explored human capital as an economic resource and has not invested sufficiently in the education and training of people. Consequently, it has been difficult to move from an economy based on physical strength and energy to an economy based on skills, knowledge, and understanding; it has also been difficult to keep up with the rapid pace of change in the world economy (American Society for Training and Development [ASTD], 1989b).

It is becoming evident that schools alone cannot and should not be expected to educate and train people for work. Corporate America is increasingly recognizing the value of human capital as a means of obtaining a competitive edge. As a result, corporate education, training, and development are expanding. Business is arguably the largest provider of adult education in the United States. Precise figures regarding the total amount of money spent on corporate training and development have been difficult to calculate. However, there is no question that the amount is large and that it will continue to increase.

An estimated forty billion dollars are spent annually on formal training in industry (Carnevale & Gainer, 1989; Feuer, 1988; Gordon, 1991). If the 180 billion dollars spent on informal training (including on-the-job training) is also considered, the figure is almost as large as that spent on elementary, secondary, and higher education (ASTD, 1986). About one-third of the labor force, approximately 36.5 million adults, receive some type of formal training in business and industry each year. Approximately 1.3 billion hours are spent in corporate classrooms (Feuer, 1988; Gordon, 1991). Business and industry training provides most skills acquired after age twenty-five and accounts for eighty-five percent of the variation of lifetime earnings (ASTD, 1986).

Corporate education is undeniably a massive enterprise, with continued expansion a virtual certainty. Eighty-nine percent of America's largest companies designate a chief human resource executive at the corporate level, and between 1980 and 1986, the number of people assigned to corporate training responsibilities on a full-time basis increased thirty-eight percent (ASTD, 1986).

Need for Training Professionals

Accompanying this unprecedented commitment to employer training is an increasing awareness of the need for professionals to design and conduct that training. In the past, most trainers were selected from within the organization because they had specialized knowledge to pass on to fellow workers. However, these individuals had little or no knowledge of or expertise in training and were expected to learn teaching skills on the job. This unstructured education, once the norm in the field of training, is no longer sufficient to meet the needs of most organizations (Palmer, 1989). Today, many organizations are attempting to ensure the effectiveness of their training personnel by providing them with organized, formal training programs and activities.

In addition, many training employees are interested in pursuing degrees with a program emphasis in training. Not surprisingly, there has been a marked increase in the number of training and development programs offered by higher education institutions (Palmer, 1989). In 1976, the American Society for Training and Development compiled a list of thirty-six universities, colleges, junior colleges, and institutes which offered programs in training and development. By 1983, the ASTD listing of such programs had grown to seventy-three programs at the master's level alone (Venable, 1985).

Vocational teacher education programs have traditionally prepared teachers for work in secondary schools in specific service areas such as agriculture or business education. However, the rapid growth in training and human resource development (HRD) programs has created many new vocational teaching positions in the business community

Almost twenty percent of the trainers working in business and industry have degrees in education and teaching experience (Lee, 1985). Results of a survey conducted by Pace, Peterson, and Porter (1986) indicate that schools of education are the predominant setting for programs in training and development, and vocational education departments are listed as a primary source of such programs. In 1989, the ASTD Professors Network developed a partial listing of programs. Of the twenty-seven programs listed in the *Directory of HRD Academic Programs*, almost thirty percent are offered through vocational education departments (ASTD, 1989b).

Faculty and students from university departments of vocational education have been involved with business and industry training efforts for many years. Many graduates of vocational teacher education programs have pursued careers in educational roles in the private sector. Others have served as advisors or consultants for education and training programs in business and industry. Numerous research and service activities, although intended primarily for public school audiences, have had an indirect impact on training and development in the business community. However, the role of preparing professional personnel for training and development positions in business and industry appears to be expanding and becoming more formal. There is a consensus among vocational teacher educators that large numbers of vocational teacher education graduates are entering the training and development field in private business and industry and that many more are teaching only a short period of time and then leaving for positions in the private sector (Leach & Snauwaert, 1988).

The roles of vocational educators in business and industry are distinctly different from those of vocational educators employed in secondary public schools. As training and development programs become increasingly prominent in business and industry and vocational teacher education programs take on the expanded role of preparing professionals for training and development positions, vocational teacher education programs must change accordingly. It is imperative that the evolving curriculum embrace the knowledge base and skills required to perform this role successfully.

This document contains four sections. In the first section, a review of literature is presented to describe the knowledge base and skills which contribute to success as a vocational educator working in private sector training and development. In the second section, a psychological, interpersonal, and motivational profile of trainers rated as excellent by their superiors is presented. A comparison is provided between instructors rated as excellent and working in the private sector and those working in the public sector. In section three, a discussion of the appropriateness of the content of vocational teacher education programs for preparing effective business and industry trainers is presented. Finally, in section four, conclusions are presented which have policy implications for schools of education and vocational teacher preparation programs.

A REVIEW OF RESEARCH ON KNOWLEDGE AND SKILLS NEEDED BY VOCATIONAL EDUCATORS WORKING IN BUSINESS AND INDUSTRY

This review (1) provides a brief description and definition of the training and development profession, (2) examines the need for and practicality of establishing a common body of knowledge for the field, (3) examines the extent to which there is agreement on the establishment of a common body of knowledge, and (4) describes and compares the various lists of competencies that have been developed to represent success requirements for professionals in the training and development field.

The scope of the review is necessarily broad and progresses from general to specific. Therefore, the review includes relevant information regarding the preparation of adult educators, vocational educators, and training and development specialists. However, the focus is on the knowledge and skills required for success in the training and development arena.

The Training and Development Profession

Research and discussion of the training and development profession would be simplified if there were one term used to refer to vocational educators working in the private sector, one definition of the focus of their work, and one description of the roles and activities they perform. Although this is not the case, there are some general understandings regarding the profession.

The training and development field is a relatively new professional career choice. The purpose of the profession is to foster a desired change in the performance of a defined audience in an on-the-job environment (Goldstein, 1980). The term "human resource development" (HRD), rather than "training and development," has been used increasingly to refer to this professional practice area (Jacobs, 1987; Nadler, 1983).

HRD, human resource management (HRM), and human resource environment (HRE) are the three human resource functions commonly found in organizations. Nadler and Wiggs (1986) listed the activities of each of these human resource functions:

- HRD
  - Training
  - Education
  - Development
- HRM
  - Recruitment
  - Selection
  - Placement
  - Appraisal
  - Compensation
  - Work force planning
- HRE
  - Job enrichment
  - Job enlargement
  - Organizational development

Despite apparent differences, the terms "training and development" and "HRD" are often used interchangeably, if not synonymously. Nadler (1983) defined HRD as "organized learning experiences, in a given period of time, to bring about the possibility of performance change or general growth for the individual within an organization" (p. 1). As part of a competency study conducted in 1982, ASTD approved a definition of training and development: "Identifying, assessing, and—through planned learning—helping develop key competencies (knowledge, skill, attitudes) which enable individuals to perform current or future jobs" (McLagan, 1983).

Most recently, McLagan (1989)—as part of the new ASTD competency and standards study, *Models for HRD Practice*—defined HRD as "the integrated use of training and development, organization development, and career development to improve individual, group, and organizational effectiveness" (p. 53).

Within the HRD function, the focus of training and development activities is described by McLagan (1989) as "identifying, ensuring, and—through planned learning—helping develop the key competencies that enable individuals to perform current or future jobs" (p. 53).

Although according to Laird (1985) not all training specialists distinguish among "training," "education," and "development," distinctions can be made among training, education, and development activities. Approximately twenty years ago Nadler (1970) distinguished differences. Training, according to Nadler, is "activities which are designed to improve human performance on the job the employee is presently doing or being hired to do" (p. 40). Education includes those activities that "are designed to improve the overall competence of the employee in a specified direction and beyond the job now held" (p. 60). Development involves preparing employees so they can "move with the organization as it develops, changes, and grows" (p. 88).

Despite the differences among the various definitions, or perhaps because of them, two major issues emerge from the literature related to the identification of the knowledge base for training and development professionals. The first issue is the debate regarding the practicality and worth of identifying a common knowledge base or set of core competencies. The second issue regards the extent to which the knowledge base has been identified or defined.

The Need for and Practicality of Establishing a Common Body of Knowledge

A wide spectrum of views exists among researchers regarding the need for and practicality of establishing a common body of knowledge or for constructing a universal set of competencies for vocational educators, regardless of the setting in which they work. In fact, many experts in teacher education insist that the knowledge base of the teaching profession at large has never been systematically defined (Grossman & Richert, 1988; Jones, 1988; Smith, 1985; Tyler, 1985). There are a growing number of generic principles of effective teaching which are incorporated into examinations such as the National Teachers Examination and state-level assessments of teaching performance. However, Shulman (1987) summarized the opinions of many teacher educators:

> The great danger occurs, however, when a general teaching principle is distorted into prescription, when maxim becomes mandate. Those states that have taken working principles of teaching, based solely on empirical studies of generic teaching effectiveness and have rendered them as hard, independent criteria for judging a teacher's worth, are engaged in a political process likely to injure the teaching profession rather than improve it. (p. 323)

Doyle (1983) summarized another argument opposing one list of competencies for all teachers: A single list of competencies cannot apply to all teaching situations and will be either too general or too specific. Constructing a set of competencies entails substantial risk "because there is as yet no comprehensive and documented theory of teaching from which to draw, and any effort to identify important characteristics in the absence of such a theory necessarily involves considerable inference, if not speculation" (p. 27).

Conversely, there is an abundance of research that supports the practicality of identifying a knowledge base for the teaching profession. Seldin (1980) expressed the view of many teacher educators. He maintained that a list of effective teaching behaviors can be constructed based on large numbers of consistent studies in the area of teaching effectiveness which utilize research methods such as observational analysis, correlational studies, factor analysis, and the critical incident approach.

Shulman and his colleagues at Stanford University are studying the "knowledge growth in a profession." Their work represents the most comprehensive recent effort to determine the knowledge base for teaching and how it is acquired. Shulman (1987) advised that advocates of professional reform base their arguments on the belief that there exists a "knowledge base for teaching—a codified or codifiable aggregation of knowledge, skill, understanding, and technology, of ethics and disposition, of collective responsibility—as well as the means for representing and communicating it. The reports of the Holmes Group (1986) and the Carnegie Task Force on Teaching as a Profession (1986) rested on this belief, and furthermore, claimed that the knowledge base is growing" (p. 316). The authors of these reports argued that this knowledge base should frame teacher education and directly inform teaching practice.

However, major studies such as the Stanford study have not included vocational education teachers in their samples. Vocational teacher education was not included in the reform recommendations that emanated from *Tomorrow's Teachers* (Holmes Group, 1986). Its advice to vocational teacher educators was to engage in the necessary research to inform policymakers of appropriate recommendations for the preparation of vocational teachers.

The call for research to identify appropriate knowledge and skills to be included in programs preparing vocational educators is not a new one. Many have cited the need for

research in vocational teacher education (Adamsky & Cotrell, 1979; David, 1983; Evans, 1982; Griggs & Burnham, 1988; Hjelm, 1983; Lynch, 1988; Phelps & Hughes, 1986; Seidman, 1986). In addition, the few existing studies on vocational teacher education tend to provide little specific information about the nature of the teacher preparation programs. The field has not determined conclusively what vocational educators need to know and be able to do in order to perform their jobs successfully (Griggs & Burnham, 1988).

A major shortcoming of the commission-based studies concerned with reform of teacher education and other research in teacher education has been their focus on teaching and learning as it occurs in elementary and secondary schools. As more learning is required in the workplace, vocational educators are working increasingly with adults in business and industry settings. Many vocational teacher educators contend that the preparation of vocational education and training specialists for business and industry is an expanding new market that must be given attention when considering vocational teacher education reform (Adams, Pratzner, Anderson, & Zimmerer, 1987; Leach & Snauwaert, 1988).

Much less research and discussion has focused on the knowledge base required for success in the training and development field than on success in the teaching profession. However, similar debate persists concerning the practicality of identifying such a knowledge base for training and development professionals. The major concern is the feasibility of determining a common body of knowledge and skills for such a diverse and evolving field.

Watkins (1989) pointed out that determining a common body of knowledge has been as problematic for the training and development field as it has been for the teaching profession. Preparing practitioners for the field based on statements of competencies that have been developed to this point would serve only to restrict HRD practice rather than improve it. In Watkin's opinion, a vision for the field rather than the curriculum needs to be standardized. More important than a core curriculum is the need to help students see the connection between knowledge and action, theory and practice. It is important for the field to reach agreement on a common set of values which might characterize training and development professionals.

Jacques (1987) claimed that current human resource work is dysfunctional. Furthermore, adequate integration is impossible because it is an atheoretical field with only fragments of theories and descriptive statements. Jacques described the situation in the following manner:

> Scientifically and technically we are squarely back with the alchemists and blood letters. Like them, we have not yet developed a thermometer which gives us the capacity to measure and delimit our field. We need rigorous, shared, defensible, common definitions before we can have a coherent theory of people development in organizations. (p. 70)

Galbraith and Gilley (1986) expressed concern about the practicality of constructing a common set of competencies for the training and development field. The diversity of competencies required for the variety of roles within the field make competency identification a demanding task. They cited difficulties identifying capable individuals within the profession to determine such a list and were concerned with the reliability and validity of such lists and with the process used to determine the reliability and validity. They summarized their concern by stating, "The reality of identifying, defining, and measuring competencies for each role or job held by practitioners seems questionable. Developing an appropriate level for each identified competency can add further confusion to the issue" (p. 30).

Those who argue the need for and practicality of determining a common body of knowledge and skills for the field base their contentions on the premise that doing so will professionalize the field and will yield practical advantages as well.

The identification of an existing body of knowledge and a group of skills that enable a person to successfully perform services in the training and development field has been cited as a requisite cornerstone of professionalism. There is a clear relationship between the need for a field to identify a common body of knowledge and competencies and the achievement of professional status (Bullett, 1981; Gilley & Galbraith, 1986; Jacobs, 1987; Scheer, 1964; Whyte, 1977). Jacobs (1987) claimed that many different occupational groups claim professional status, and the desirability of being perceived as professional is consistently high. Further, "it is not enough to provide descriptions of what members of the profession do. It is also necessary to investigate the theoretical frameworks that guide and support professional practice" (p. ix).

Bratton and Hildebrand (1980) listed six ways that identification of competencies help both the practitioner and the profession:

- serve as a tool for self-assessment and professional growth,
- provide a common set of concepts and vocabulary which will improve communication among professionals and other professional groups,
- provide academic and professional preparation programs with information for program development,
- serve as a basis for a potential certification program,
- help employers identify qualified applicants, and
- serve as a basis for defining an emerging field of study.

Pace (1989) formulated a list of practical advantages for identifying key bodies of knowledge that can be assigned to courses in instructional programs; these bodies of knowledge constitute minimum knowledge, skills, and attitudes necessary for a graduate to be considered a professional in HRD. Basing coursework on common bodies of knowledge will

- facilitate the transfer of credit among institutions that offer academic degrees in HRD;
- assure employers that students have exposure to the accepted concepts, skills, and attitudes and that they can create the products relevant to the knowledge;
- allow students to share experiences in common with professionals in the field and encourage professional skills and attitudes prior to entry into the field;
- simplify the preparation of materials and methods for educating students;
- make it easier to explain and justify courses and programs to colleagues and administrators;
- more clearly distinguish HRD from other areas of study and reduce confusion among educators as well as professionals;

- facilitate cooperation and interaction among faculty who teach similar courses;
- make it easier to evaluate the quality of courses and programs for faculty and program development;
- simplify the identification, recruitment, and selection of qualified faculty to fill positions;
- provide for opportunities to devise and prepare more creative assignments and methods of instruction;
- make it easier to evaluate students and predict their success in the field; and
- increase the likelihood that professionals in the field will understand one another more quickly and more fully. (p. 84)

Warzynski and Noble (1976) identified five distinct stages that could be used as a guide for distinguishing professions from occupations. In a profession, a group of individuals begins working on a full-time basis to perform a service in response to a societal need. Second, because specialized knowledge and training are necessary to perform this service, a training school (usually university-based) is established. Third, the graduates of the training school form a professional association. Fourth, the professional association wins political support and is granted the privilege of licensing or certifying its members. Fifth, the association adopts a code of ethics to regulate the conduct of its members and ensure appropriate service to clients.

Regarding the establishment of a university-based training program, Nadler (1983) maintained that much of the confusion in defining the field stems from the lack of an undergraduate academic discipline. Practitioners in the field come from a variety of backgrounds and do not have common academic experiences which would define the field. Nadler predicted that until there is agreement on what body of knowledge constitutes the field, there will be little advancement in increasing the competence of practitioners; further, when agreement does come, higher education institutions will undoubtedly have significant influence in the development of sound academic programs.

Knowledge and Skill Required for Success

Just as there is disagreement on the need for and practicality of identifying a common knowledge base for the training and development field, there is also disagreement regarding the extent to which such a knowledge base has been identified.

Although some advocate that there is a knowledge base unique to vocational teacher education, Griggs and Burnham (1988) acknowledged the lack of a common knowledge base for vocational teacher education in general, regardless of the setting in which graduates pursue their careers. They indicated that the field has not determined conclusively what vocational teachers need to know and be able to do in order to help students achieve success.

Similarly, a universally accepted knowledge base for vocational educators preparing for work in business and industry settings has not been established. Galbraith and Gilley (1986) pointed out that HRD possesses only two of the theoretical characteristics of a profession: a code of ethics and the interchange of ideas among members. They maintain that although there has been progress, the field has not established an accepted body of knowledge nor identified a set of competencies needed by practitioners in the field.

Conversely, some argue that although there remains a great deal of work to be done in refining, adapting, and revising the roles and accompanying competencies required of training and development professionals, there appears to be general agreement that a body of knowledge has been at least partially identified (Leach & Snauwaert, 1988; Otte, 1987).

Jacobs (1987) provided support for this contention. Jacobs noted that although training and development professionals have not recognized a systems-based field of study, they are increasingly able to point to a documented body of knowledge and skills on which their practice is based.

Adult and Continuing Education

Almost thirty years ago, the Reports Committee of the Commission of Professors of Adult Education began work to provide the basis for systemic organization of the field. Their first publication in 1961, *Adult Education: A New Imperative of Our Times*, was

directed to those individuals responsible for planning and conducting adult and continuing education programs and especially to those universities and college officials responsible for organizing training programs for professional adult educators. A second publication in 1964, *Adult Education: Outlines of an Emerging Field of University Study*, provided a more complete description of the body of knowledge required for graduate training programs for adult educators. Individuals working in the following professions were identified as the "careerists" of adult education:

- public school directors and supervisors of adult education
- agricultural extension agents
- university extension and evening college administrative staff members
- industrial training directors
- labor union educational directors
- government agency training directors
- health educators
- social agency adult work directors
- library adult education specialists
- adult work directors in religious institutions
- educational television program directors
- private and commercial school administrators of adult programs

For individuals in these professions, preparation has been provided since 1929 in the university graduate programs of adult education (Jensen, Liveright, & Hallenbeck, 1964).

Studies identified several necessary conditions for successful adult education. A coherent curriculum of adult education was needed that would provide for the sequential development of knowledge, understanding, skills, attitudes, and values required to

maintain effectiveness in a changing social order. In addition, the corps of leaders and teachers of adults needed to be enlarged and provided with the knowledge and skills required for them to help adults learn efficiently (Jensen, Liveright, & Hallenbeck, 1964).

Liveright (1964) identified four objectives that should be common to programs of professional education for the adult educator and that helped to provide the framework for graduate programs in adult education:

- Competence to practice his profession with sufficient knowledge and skill to satisfy its requirements.
- Social understanding with sufficient breadth to place his practice in the context of the society which supports it and to develop the capacity for leadership in public affairs.
- Philosophy and set of values which will steadily increase knowledge and skill needed by practice.
- Competence in conducting or interpreting research so he can add to human knowledge either through discovery or application of new truths. (p. 308)

Building on extensive research conducted and literature prepared during the late 1960s and the 1970s, Knox (1979) developed *Enhancing Proficiencies of Continuing Educators*. The purpose of this sourcebook was to help define the scope of the field and to specify important areas of practitioner proficiency. Knox defined the concept of proficiency as being related to both knowledge and action and defined professional proficiency as a desirable level that most of the highly effective practitioners would be expected to achieve. According to Knox, all categories of practitioners engaged in continuing education (i.e., administrators, teachers, and counselors) need to be proficient in three broad areas. Two are mainly cognitive—an understanding of the field of continuing education and an understanding of adults as learners. The third is mainly affective and consists of personal qualities such as positive attitudes toward lifelong learning, effective interpersonal relations, and innovativeness.

More specifically, Knox (1979) concluded that effective administrators of adult education programs must demonstrate three areas of proficiency: (1) administration (participation, resources, staffing, and leadership), (2) program development (needs, context, objectives, activities, and evaluation), and (3) planning and use of research. Teachers of adult education programs are more effective if they are knowledgeable about

subject matter and adult development and are capable of using program development procedures.

One of the major contributors to the field of adult learning, Malcolm Knowles, has often been referred to as the "Father of Adult Learning." Knowles is credited for putting "andragogy," the art of helping adults learn, into the training vernacular. Two major themes run through Knowles' work—control and discovery. Knowles asserted that there would be no learner resistance if participants were learning what they believed they needed and if the instructor approached the training role as facilitator, catalyst, and guide (i.e., used participative approaches). In addition to his then revolutionary ideas about trainer control, Knowles focused on discovery learning—growth through insight—and early opportunity for application. If learners could be active participants—connecting new learning with old wisdom—then understanding, rather than fact retention, would ensue (Bell, 1989).

Knowles (1980) developed a list of competencies for the role of adult educator which provides the basis for many current adult educator preparation programs. The competencies are categorized by the roles of learning facilitator, program developer, and administrator:

1. *As a Learning Facilitator*

   - Ability to describe and apply modern concepts and research findings regarding the needs, interests, motivations, capacities, and developmental characteristics of adults as learners.
   - Ability to describe the differences between youth and adults as learners and the implications of these differences for teaching and learning.
   - Ability to assess the effects on learning of forces impinging on learners from the larger environment (group, organizations, communities).
   - Ability to describe the various theories of learning and assess their relevance to particular adult learning situations.
   - Ability to conceptualize and explain the role of teacher as a facilitator and resource to self-directed learners.
   - Ability to establish a warm, mutually respectful, facilitative relationship with learners.

- Ability to engineer a physical and psychological climate of comfort, interactiveness, collaborativeness, openness, and mutual trust.
- Ability to engage learners responsibly in self-diagnosis of needs for learning.
- Ability to engage learners in formulating goals, objectives, and directions of growth in terms that are meaningful to them.
- Knowledge of the rationales for selecting a variety of materials, methods, and techniques for achieving particular educational objectives.
- Skill in using a broad range of materials, methods, and techniques and in inventing techniques to fit new situations.
- Ability to involve learners appropriately in the planning, conducting, and evaluating of learning activities.
- Ability to design learning experiences for accomplishing a variety of purposes while taking into account individual differences among learners.
- Ability to make use of small group processes effectively.
- Ability to evaluate learning procedures and outcomes and to select or construct appropriate instruments and procedures for this purpose.

2. *As a Program Developer*

- Ability to describe and apply the foundational concepts (e.g., goal setting, forecasting, social mapping, social action, systems theory, leadership identification, needs assessment) that undergrid the planning process in adult education.
- Ability to involve community representatives appropriately in the planning process.
- Ability to develop and use instruments and procedures for assessing the needs of individuals, organizations, and subpopulations in communities.
- Ability to work effectively with various agencies in the community in collaborative program planning.
- Ability to select and use procedures for constructing andragogical process designs.

- Ability to design programs with a creative variety of formats, activities, schedules, resources, and evaluative procedures.
- Ability to interpret census data, community surveys, and needs assessments in adapting programs to specific clienteles.
- Ability to use planning mechanisms, such as advisory councils, committees, and task forces, effectively.
- Ability to develop and carry out a plan for program evaluation which will satisfy the requirements of institutional accountability and provide for program improvement.

3. *As an Administrator*

- Ability to describe and apply theories and research findings about organizational behavior, management, and renewal.
- Ability to formulate a personal philosophy of administration and adapt it to various organizational situations.
- Ability to formulate policies that clearly convey the definition of the mission, social philosophy, and educational commitment of an organization.
- Ability to evaluate organizational effectiveness and guide its continuous self-renewal process.
- Ability to plan effectively with and through others, sharing responsibilities and decision making with them when appropriate.
- Ability to select, supervise, and provide for inservice education of personnel.
- Ability to evaluate staff performance.
- Ability to analyze and interpret legislation affecting adult education.
- Ability to describe financial policies and practices in the field of adult education and to identify a variety of funding sources.
- Ability to perform the role of change agent vis-a-vis organizations and communities utilizing educational processes.
- Ability to design and use promotion, publicity, and public relations strategies appropriately and effectively.

- Ability to design and operate programs within a limited budget.
- Ability to make and monitor financial plans and procedures.
- Ability to prepare grant proposals and identify potential funding sources for them.
- Ability to use consultants appropriately.
- Ability and willingness to experiment with programmatic innovations and to assess their results. (p. 256)

Vocational Education

Several factors complicate efforts to study vocational teacher education and thus determine the knowledge and skills required for successful practice. As is the case with teacher education in general, vocational teacher education programs and practices vary widely. In addition, there are several routes to becoming a vocational teacher, and vocational education occurs in many settings and serves diverse populations. Questions about the knowledge and skills needed by vocational educators continue to need attention. However, according to Griggs and Burnham (1988), in addition to a common knowledge base for all teachers, there is a knowledge base that is unique to vocational teacher education.

Approximately twenty years ago, development began on a series of performance-based teacher education (PBTE) learning packages which focused on specific professional competencies of vocational educators that are important to successful vocational teaching both at the secondary and postsecondary levels of instruction. The competencies on which these modules are based were identified and verified through sustained research and testing at the National Center for Research in Vocational Education at Ohio State University. According to the American Association for Vocational Instructional Materials, to date over one-hundred and thirty modules have been developed in the following fourteen professional skill categories:

1. Program planning, development, and evaluation
2. Instructional planning

3. Instructional execution

4. Instructional evaluation

5. Instructional management

6. Guidance

7. School-community relations

8. Vocational student organization

9. Professional role and development

10. Coordination of cooperative education

11. Implementing competency-based education (CBE)

12. Serving students with special/exceptional needs

13. Assisting students in improving their basic skills

14. Teaching adults

Current thinking about the knowledge and skills that serve as the basis for preparation of vocational teachers stems from dramatic changes in the workplace. It is estimated that seventy-five percent of all workers currently employed will need to be retrained by the year 2000 because jobs will require improved skills (ASTD, 1986). Therefore, in addition to providing vocational training aimed at developing specific job skills (both for entry level positions and for job maintenance and advancement), vocational teachers need to equip their students with higher order, more generally applicable communication and interpersonal skills (Pratzner, 1985; Tozer & Nelson, 1988; Wirth, 1987).

Based on this view, Tozer and Nelson (1988) recommend that vocational teachers will need to be well-educated, to have an unusual grasp of innovative teaching methods, and to have a grasp of the economic and sociological realities of the work world, a grasp that surpasses that of their peers in nonvocational teacher education programs.

Lynch (1988) summarized that the knowledge base for vocational teacher education should come from the content or subject matter disciplines in which the practitioner will work (e.g., business, marketing, agriculture, and engineering technology); studies of the knowledge, ethos, and structure of the workplace; and pedagogical knowledge or tools of the trade for teachers.

Training and Development

There is agreement that training and development has emerged as a professional field only during the past twenty to forty years (Craig, 1976; Jacobs, 1987; Nadler, 1983). Accompanying the emergence of training and development as a professional field is a sustained effort to determine the knowledge base required for vocational educators working in business and industry. A number of professional associations and groups have provided the impetus for the substantial progress made during the past fifteen years.

The Civil Service Commission, Bureau of Training (1976) identified five roles of the employee development specialist: career counselor, consultant, learning specialist, program manager, and training administrator. These roles were developed for use as a job definition and development planning tool for employee development specialists in government service.

The Ontario Society for Training and Development (1979) produced a competency analysis for trainers which was organized around four major functions: instructor, designer, manager, and consultant. The functions were defined by their varying levels of involvement in twelve activity areas ranging from administration to evaluation.

In 1972, the Professional Standards Committee of the American Society for Training and Development (ASTD) was asked to examine and identify the basic competencies for the HRD professional (Hatcher, 1974). In 1976, the ASTD Professional Development Committee undertook the task of determining the basic roles and core competencies for training and development professionals in an effort to assess more precisely the professional development needs of practitioners. Concurrent with the committee's work on defining training roles and competencies were its efforts to provide training practitioners with a process for managing self-development. The committee felt a

strong need for self-development because limited resources existed for developing trainers in the formal education system (Collings, 1976).

Pinto and Walker (1978) reported the results of the ensuing study which served as a foundation for future research conducted by the ASTD. In their research, a role was defined as "a set of activities performed by an individual in fulfillment of the expectations imposed by professional standards of behavior or employer position requirements" (p. 59). They identified the following fourteen roles performed by HRD practitioners:

- needs analysis and diagnosis
- determine appropriate training approach
- program design and development
- develop material resources (make)
- manage internal resources (borrow)
- manage external resources (buy)
- individual development planning and counseling
- job/performance-related training
- conduct classroom training
- group and organization development
- training research
- manage working relationships with managers and clients
- manage the training and development function
- professional self-development

In addition to a set of core competencies, Jacobs (1987) maintained that academic programs for training and development must be based on a unique theoretical base which he labeled human performance technology. Jacobs maintained that such a theoretical base

can help establish standards for professional performance and outline new areas of professional activity. According to Jacobs, training and development professionals are helping professionals with uniquely defined roles. Although their focus is on helping people and organizations improve performance and achieve important goals, their work involves the use of all aspects of the work environment and system to make those improvements occur. Jacobs proposed that the following are required competencies of the training and development professional:

- Identify organizational needs.
- Analyze indicators, causes, and costs of human error.
- Conduct job and task analyses.
- Specify job performance standards.
- Select appropriate training and development solutions.
- Design instructional methods and media.
- Construct nontraining job performance aids.
- Specify/implement appropriate motivational, job redesign, and environmental solutions.
- Control and ensure the quality of training and development projects.
- Assess the effectiveness of performance systems.
- Maintain credible and collaborative consulting relationships.
- Consider oneself as a member of a helping profession.
- Understand/perform research related to the improvement of professional practices in training and development.
- Engage in professional and self-development activities.
- Promote the understanding/use of models and practices related to the improvement of human and organization performance.

During the past eight years, two major programs of research have advanced the determination of distinct areas of knowledge and skill required for success in the training and development field. The first consisted of *Models for Excellence: The Training and Development Competency Study* and its follow-up, *Models for HRD Practice*, which were both supported by the ASTD. The second, the *Standards* studies, focused on competencies for instructional designers and instructors and were supported by the International Board of Standards for Training, Performance, and Instruction (IBSTPI) (IBSTPI, 1986, 1988). Jacobs (1987) pointed out features of these studies which allow for a greater degree of confidence in their findings: (1) both were conducted with a national focus, (2) both included the perspectives of broad segments of the training and development profession, and (3) both used a defensible and rigorous inquiry process (p. 9).

Models for Excellence

The Models for Excellence study (McLagan, 1983), sponsored by the Professional Development Committee of ASTD, was initiated in 1981 to provide a common framework consisting of a set of roles, outputs, and competencies for use in thinking about, working in, and advancing the training and development field. The study identified fifteen distinct job roles and respective clusters of knowledge and skill (competencies) that are critical to performing the roles successfully. A job role was defined as "a set of work activities within a job with a common purpose which transcends specific jobs. It has a core identity within a field or profession" (p. 130). The roles below describe the major training and development functions which were identified by the study:

- *Evaluator*—The role of identifying the extent of a program, service, or product's impact.
- *Group Facilitator*—The role of managing group discussion and group process so that individuals learn and group members feel the experience is positive.
- *Individual Development Counselor*—The role of helping an individual assess personal competencies, values, goals, and identify and plan development and career actions.
- *Instructional Writer*—The role of preparing written learning and instructional materials.
- *Instructor*—The role of presenting information and directing structured learning experiences so that individuals learn.

- *Manager of Training and Development*—The role of planning, organizing, staffing, controlling training and development operations or training and development projects, and of linking training and development operations with other organization units.

- *Marketer*—The role of selling training and development viewpoints, learning packages, programs, and services to target audiences outside one's own work unit.

- *Media Specialist*—The role of producing software for and using audio, visual, computer, and other hardware-based technologies for training and development.

- *Needs Analyst*—The role of defining gaps between ideal and actual performance and specifying the cause of the gaps.

- *Program Administrator*—The role of ensuring that the facilities, equipment, materials, participants, and other components of a learning event are present and that program logistics run smoothly.

- *Program Designer*—The role of preparing objectives, defining content, selecting, and sequencing activities for a specific program.

- *Strategist*—The role of developing long-range plans for what training and development structure, organization, direction, policies, programs, services, and practices are needed to accomplish the training and development mission.

- *Task Analyst*—Identifying activities, tasks, subtasks, human resource and support requirements necessary to accomplish specific results in a job or organization.

- *Theoretician*—The role of developing and testing theories of learning, training, and development.

- *Transfer Agent*—The role of helping individuals apply learning after the learning experience. (p. 29)

In addition, the ASTD study identified thirty-one competencies as important for excellent performance in the training and development field. The competencies (knowledge and skill areas) were defined at basic, intermediate, and advanced levels. As described in the model (McLagan, 1983) "basic" means having a general understanding of key principles and being able to function in simple repetitive situations. "Intermediate" means having a depth of understanding and the skills and ability to function in a broad range of moderately difficult situations. "Advanced" means having a broad and deep understanding of knowledge; skill levels suitable for functioning in complex, varied situations; and ability

to serve as a model of subject matter mastery and skills (p. 37). The thirty-one competencies and a brief description of each follows:

- *Adult Learning Understanding*—Knowing how adults acquire and use knowledge, skills, attitudes. Understanding individual differences in learning.
- *A/V Skill*—Selecting and using audio/visual hardware and software.
- *Career Development Knowledge*—Understanding the personal and organizational issues and practices relevant to individual careers.
- *Competency Identification Skill*—Identifying the knowledge and skill requirements of jobs, tasks, roles.
- *Computer Competence*—Understanding and being able to use computers.
- *Cost-Benefit Analysis Skill*—Assessing alternatives in terms of their financial, psychological, and strategic advantages and disadvantages.
- *Counseling Skill*—Helping individuals recognize and understand personal needs, values, problems, alternatives, and goals.
- *Data Reduction Skill*—Scanning, synthesizing, and drawing conclusions from data.
- *Delegation Skill*—Assigning task responsibility and authority to others.
- *Facilities Skill*—Planning and coordinating logistics in an efficient and cost-effective manner.
- *Feedback Skill*—Successful communicating of opinions, observations, and conclusions.
- *Futuring Skill*—Projecting trends and visualizing possible and probable futures and their implications.
- *Group Process Skill*—Influencing groups to both accomplish tasks and fulfill the needs of their members.
- *Industry Understanding*—Knowing the key concepts and variables that define an industry or sector (e.g., critical issues, economic vulnerabilities, measurements, distribution channels, inputs, outputs, information sources).
- *Intellectual Versatility*—Recognizing, exploring, and using a broad range of ideas and practices. Thinking logically and creatively without undue influence from personal biases.

- *Library Skills*—Gathering information from printed and other recorded sources. Identifying and using information specialists, reference services and aids.

- *Model Building Skills*—Developing theoretical and practical frameworks that describe complex ideas in understandable, practical ways.

- *Negotiation Skill*—Securing win-win agreements while successfully representing a special interest in a decision situation.

- *Objectives Preparation Skill*—Preparing clear statements that describe desired outputs.

- *Organization Behavior Understanding*—Seeing organizations as dynamic, political, economic, and social systems which have multiple goals; using this larger perspective as a framework for understanding and influencing events and change.

- *Organization Understanding*—Knowing the strategy, structure, power networks, financial position, systems of a specific organization.

- *Performance Observation Skills*—Tracking and describing behaviors and their effects.

- *Personnel/HR Field Understanding*—Understanding issues and practices in other HR areas (Organization Development, Organization Job Design, Human Resource Planning, Selection and Staffing, Personnel Research and Information Systems, Compensation and Benefits, Employee Assistance, Union/Labor Relations).

- *Presentation Skills*—Verbally presenting information such that the intended purpose is achieved.

- *Questioning Skill*—Gathering information from and stimulating insight in individuals and groups through the use of interviews, questionnaires, and other probing methods.

- *Records Management Skill*—Storing data in easily retrievable forms.

- *Relationship Versatility*—Adjusting behavior in order to establish relationships across a broad range of people and groups.

- *Research Skills*—Selecting, developing, and using methodologies, statistical and data collection techniques for a formal inquiry.

- *Training and Development Field Understanding*—Knowing the technological, social, economic, professional, and regulatory issues

in the field; understanding the role training and development plays in helping individuals learn for current and future jobs.

- *Training and Development Techniques Understanding*—Knowing the techniques and methods used in training; understanding their appropriate uses.

- *Writing Skills*—Preparing written material that follows generally accepted rules of style and form, is appropriate for the audience, creative, and accomplishes its intended purposes. (p. 36)

Models for HRD Practice

Most recently, the ASTD has supported additional research and development in this area. The *Models for HRD Practice* study (McLagan, 1989) identified lists of HRD elements (called "outputs"), a list of standards in the form of quality requirements for each of the outputs, a list of ethical requirements that transcend individual outputs, and a list of HRD knowledge and skills (called competencies). Although there were title changes and combining of functions in some cases, it is apparent from the list of eleven roles described in the study that only minor revisions were made to the list of training and development roles identified in the previous study. For example, the role of theoretician was changed to researcher, the role of strategist to change agent, and the roles of media specialist and task analyst were incorporated into other roles.

The thirty-five competencies identified in the study (McLagan, 1989) "are the technical, business, interpersonal, and intellectual knowledge and skills that experts predict will be important across the full range of HRD work in the nineties" (p. 58). The competencies are as follows:

1. *Technical Competencies*—functional knowledge and skills.

   - *Adult-Learning Understanding*—knowing how adults acquire and use knowledge, skills, and attitudes; understanding individual differences in learning.

   - *Career-Development Theories and Techniques Understanding*—knowing the techniques and methods used in career development; understanding their appropriate uses.

   - *Competency-Identification Skill*—identifying the knowledge and skill requirements of jobs, tasks, and roles.

   - *Computer Competence*—understanding or using computer applications.

- *Electronic-Systems Skill*—having knowledge of functions, features, and potential applications of electronic systems for the delivery and management of HRD (such as computer-based training, teleconferencing, expert systems, interactive video, and satellite networks).

- *Facilities Skill*—planning and coordinating logistics in an efficient and cost-effective manner.

- *Objectives-Preparation Skill*—preparing clear statements that describe desired outputs.

- *Performance-Observation Skill*—tracking and describing behaviors and their effects.

- *Subject-Matter Understanding*—knowing the content of a given function or discipline being addressed.

- *Training and Development Theories and Techniques Understanding*—knowing the theories and methods used in training; understanding their appropriate use.

- *Research Skill*—selecting, developing, and using methodologies such as statistical and data collection techniques for formal inquiry.

2. *Business Competencies* (management, economics, or administration base)

- *Business Understanding*—knowing how the functions of a business work and relate to each other; knowing the economic impact of business decisions.

- *Cost-Benefit Analysis Skill*—assessing alternatives in terms of their financial, psychological, and strategic advantages and disadvantages.

- *Delegation Skill*—assigning task responsibility and authority to others.

- *Industry Understanding*—knowing the key concepts and variables that define an industry or sector. They might include critical issues, economic vulnerabilities, measurements, distribution channels, inputs, outputs, and information sources.

- *Organization-Behavior Understanding*—seeing organizations as dynamic, political, economic, and social systems that have multiple goals; using that larger perspective as a framework for understanding and influencing events and change.

- *Organization-Development Theories and Techniques*—knowing the techniques and methods used in organization development; understanding their appropriate use.

- *Organization Understanding*—knowing the strategy, structure, power networks, financial position, and systems of a specific organization.

- *Project-Management Skill*—planning, organizing, and monitoring work for purposes of delivering a specific output.

- *Records-Management Skill*—storing data in an easily retrievable form.

3. *Interpersonal Competencies*

   - *Coaching Skill*—helping individuals recognize and understand personal needs, values, problems, alternatives, and goals.

   - *Feedback Skill*—communicating information, opinions, observations, and conclusions so that they are understood and can be acted upon.

   - *Group-Process Skill*—influencing groups so that tasks, relationships, and individual needs are addressed.

   - *Negotiation Skill*—securing "win-win" agreements while successfully representing a special interest in a decision.

   - *Presentation Skill*—presenting information orally so that an intended purpose is achieved.

   - *Questioning Skill*—gathering information from and stimulating insight in individuals and groups through the use of interviews, questionnaires, and other probing methods.

   - *Relationship-Building Skill*—establishing relationships and networks across a broad range of people and groups.

   - *Writing Skill*—preparing written material that follows generally accepted rules of style and form, is appropriate for the audience, is creative, and accomplishes its intended purpose.

4. *Intellectual Competencies* (knowledge and skills related to thinking and processing of information)

   - *Data-Reduction Skill*—scanning, synthesizing, and drawing conclusions from data.

   - *Information-Search Skill*—gathering information from printed and other recorded sources; identifying and using information specialists and reference services and aids.

   - *Intellectual Versatility*—recognizing, exploring, and using a broad range of ideas and practices; thinking logically and creatively without undue influence from personal biases.

- *Model-Building Skill*—conceptualizing and developing theoretical and practical frameworks that describe complex ideas in understandable, practical ways.
- *Observing Skill*—recognizing objectively what is happening in or across situations.
- *Self-Knowledge*—knowing one's personal values, needs, interest, style, and competencies and their effects on others.
- *Visioning Skill*—projecting trends and visualizing possible and probable futures and their implications. (pp. 56-57)

Standards Studies

The International Board of Standards for Training, Performance, and Instruction (IBSTPI) was founded as a not-for-profit corporation in 1984. Its mission is "to promote high standards of professional practice in the areas of training, performance, and instruction for the benefit of individuals and organizational consumers through research, definition, and measurement of competencies" (International Board of Standards for Training, Performance, and Instruction [IBSTPI], 1988, p. vi).

The board grew out of the work of the Joint Certification Task Force which was comprised of over thirty professional practitioners and academics involved in the Association for Educational Communications and Technology (AECT) and the National Society for Performance and Instruction (NSPI). IBSTPI has developed and disseminated competencies for the professional instructional/training designer and competencies for the instructor.

The instructional design competencies that follow were developed by the IBSTPI through close cooperation with a group of highly respected professionals in the field. They represent "an attempt to define core competencies which enable a skilled instructional designer to enter an organization, diagnose a performance problem caused by knowledge or skill deficit, plan a training or nontraining intervention, execute the plan, and evaluate the results" (IBSTPI, 1986, p. 1):

- Determine projects that are appropriate for instructional design.
- Conduct a needs assessment.

- Assess the relevant characteristics of learners/trainees.
- Analyze the characteristics of a setting.
- Perform job, task, and/or content an ysis.
- Write statements of performance objectives.
- Develop the performance measurements.
- Sequence the performance objectives.
- Specify the instructional strategies.
- Design the instructional materials.
- Evaluate the instruction/training.
- Design the instructional management system.
- Plan and monitor instructional design projects.
- Communicate effectively in visual, oral, and written form.
- Interact effectively with other people.
- Promote the use of instructional design.

The instructor competencies are "the result of research into the available literature, internal corporate documents, observations, peer reviews, and evaluation" (IBSTPI, 1988, p. 1). The fourteen core competencies that follow define the generic instructor roles and are independent of settings and organizations:

- Analyze course materials and learner information.
- Assure preparation of the instructional site.
- Establish and maintain instructor credibility.
- Manage the learning environment.

- Demonstrate effective communication skills.
- Demonstrate effective presentation skills.
- Demonstrate effective questioning skills and techniques.
- Respond appropriately to learners' needs for clarification or feedback.
- Provide positive reinforcement and motivational incentives.
- Use instructional methods appropriately.
- Use media effectively.
- Evaluate learner performance.
- Evaluate delivery of instruction.
- Report evaluation information.

Summary and Conclusion

During the 1980s, there has been increased recognition of and attention to the importance of job-related education and training to the United States' economic well-being. As a result, there has been a corresponding awareness of the central role played by training and development professionals in the learning process and growing concern about how to improve their effectiveness. Most of the attention related to this concern has been focused on identifying the requisite knowledge and skills which would enhance effectiveness of training and development professionals.

The literature examined for this review substantiates the assumption that all vocational instruction, regardless of situation or student, has some level of commonality. Secondary and postsecondary vocational education have distinctly different purposes, students, curricula, and instructors. Similarly, distinctions can be made between instruction delivered in the public sector and that delivered in private business and industry. However, despite differences of opinion regarding the practicality of and need for establishing a common body of knowledge and core of competencies required of vocational

educators working in business and industry settings, it appears that there is substantial movement in that direction. In fact, literature reviewed for the preparation of this document is replete with commonality and agreement about the required knowledge and skills.

Nowlen (1988) presented a description of three models for continuing education of professionals that can be applied to vocational educators working in business and industry settings. Despite the focus on continuing education rather than preservice education, it is presented here because it provides both a context for and summary of what has been covered in this review.

The first model Nowlen described is the "update model" which has traditionally served as the chief vehicle for continuing education. This model is typified by the intensive short course organized with a view to keeping training and development professionals up to date. This approach to continuing education implies that there is an identified knowledge and skill base for the profession and that the profession is focused on "keeping up," primarily with new technology, new legislation, and required new knowledge and skills.

The second model, described by Nowlen as the update model's growing rival, is the "competence model." It is an educational design based on questioning both what professionals (in this case, training and development professionals) really do for a living and what competencies are thereby required. The competence model offers a way of basing educational choices and decisions on descriptions of actual practice. At the center of the competence model are two ideas: context (i.e., analysis of a job, role, function, or task) and requirements (i.e., demands or standards expressed in terms of level of expectation).

The third model, which Nowlen introduced as a new approach to continuing education for professionals, is the "performance model." This model recognizes that "performance is a function of both individuals and groups and that even as an individual matter, performance is the result of interacting social and personal influences" (p. 86). The focus of this model brings more than job functions into play:

> The focus also includes any other variables that are demonstrated to have a strong influence on performance: baseline knowledge and skills; the challenge of new roles; requisite skills in human relations; critical skills of mind; proficiency in self-managed learning; individual developmental progress, organizational developmental balance and the fit of individual and

> organization to one another; skills in coping with life's surprises as well as its anticipatable transitions; and understanding of the influences of environments and cultures and the skills to orchestrate them. (p. 86)

Within the context provided by Nowlen, this review concentrated on the "update model" (i.e., focusing on the identification of a required knowledge base) and on the "competence model" (i.e., focusing on competencies required to perform various roles associated with the training and development profession). Identification of requisite knowledge and skills is an important part of describing and understanding the nature of effective vocational educators working in business and industry. However, as Nowlen's "performance model" emphasizes, it is not the complete story.

CHARACTERISTICS OF EXCELLENT VOCATIONAL-TECHNICAL INSTRUCTORS WORKING IN BUSINESS AND INDUSTRY AND IN SECONDARY AND POSTSECONDARY SCHOOLS: AN ANALYSIS OF SUPERVISOR RATINGS OF INSTRUCTORS

Introduction

Numerous studies have addressed the issue of teacher personality and effectiveness in the public school setting. The knowledge, skills, and roles required for success as an excellent teacher have been well described (e.g., Dunkin & Biddle, 1974; Irby, 1978; Schulman, 1987; Wotruba & Wright, 1975). In fact, fifteen years ago Eble (1976) reviewed studies from the beginning of this century and found "reasonably consistent findings about the earmarks of good teaching" (p. 18). Irby (1978) analyzed sixteen studies dealing with students' perceptions of teachers. He found similarity on four dimensions: (1) organization/clarity, (2) enthusiasm/stimulation, (3) instructor knowledge, and (4) group interaction skill. Wotruba and Wright (1975) summarized twenty-one studies in which various groups had been asked to identify the qualities of good teaching. The resulting list of the nine most frequently named characteristics includes (1) communication skills, (2) positive attitude, (3) knowledge, (4) organizational ability, (5) enthusiasm, (6) fairness, (7) flexibility, (8) encouraging, and (9) good speaking skills.

In a review of studies at the college level, Braskamp, Brandenburg, and Ory (1984) observed a number of potential conclusions and no definition of excellence was forwarded. Most studies stressed knowledge and organization of subject matter, skills in instruction, and personal qualities and attitudes useful for working with students. Where personal characteristics are emphasized in studies, good teachers are singled out as being enthusiastic, energetic, approachable, open, concerned, imaginative, and as having a sense of humor. A substantial portion of private sector evaluations address personality traits and leadership abilities. In fact, the use of criterion-referenced evaluations of trainers in the private sector is extremely limited (Fournies & Associates, 1983). However, for the most part, vocational teachers have not been included in the research on effective teaching (Griggs & Burnham, 1988).

Vocational education program excellence is determined in large measure by and is often a direct reflection of the vocational teacher. Teacher excellence is of critical concern

to teacher educators and vocational directors, yet there is a relative dearth of information regarding the personal and psychological makeup of excellent vocational teachers. Such information helps us to gain a better understanding of their overall character, can provide a potential role model for those interested in careers in vocational education, and may prove useful in the selection of personnel for instructional positions.

Vocational instructors can be found in three distinct settings: (1) business and industry, (2) postsecondary institutions, and (3) secondary institutions. While all three settings can be considered vocational in nature, the demands, requirements, and expectations instructors face in each setting vary greatly. High knowledge and skill levels are implicit factors in the formula for vocational instructor excellence in any setting. However, results from this study suggest that there are differences from setting to setting in personality traits and psychological characteristics of instructors who are rated excellent from each of the three settings.

Personality profiles were developed in three separate studies that analyzed and established the psychological composition of vocational instructors who were rated as excellent and who work in business and industry, in two-year postsecondary institutions, and in secondary institutions. A comparison of those profiles is presented in this article. Comparing and contrasting the psychological profiles of the three groups of vocational educators rated as excellent provides a clearer understanding of how they are similar and different from both the general population and from each other. This information can be useful in structuring appropriate curriculum for preparing vocational instructors to work in each setting. The information may also have implications for recruitment, selection, and guidance purposes.

Purpose of the Study

The overall purpose of this study was to identify the personality traits associated with excellent vocational-technical instructors. More specifically, psychological, motivational, and demographic profiles were developed of vocational-technical instructors who were rated as excellent by their supervisors and who work in business and industry settings and postsecondary and secondary institutions. Similarities and differences among

the profiles were then identified, with comparisons and contrasts made among groups and with the general population.

Although teaching is among the world's oldest professions, the systematic study of teaching is a relatively new endeavor. Much of what contributes to effective teaching, particularly the subtleties associated with human interaction, has yet to be discovered and described. Development of a psychological profile of excellent vocational instructors may be helpful in the effort to define, describe, and reproduce good teaching.

Method

Individuals assumed to have knowledge of the requirements and characteristics of successful instruction in each of the three settings, responsibility for evaluating performance of instructors, and ability to identify successful instructors in their organizations or institutions were selected to participate in three separate studies. These individuals were asked to describe the best vocational instructors in their organization or institution by completing standardized instruments. Results obtained from these studies were analyzed and summarized to provide profiles of excellent vocational instructors for each of the three settings. The profiles were then compared and contrasted.

Sample Selection

Business and Industry

A sample of managers in Fortune 500 companies who had responsibility for the direction and evaluation of trainers was selected to develop the profile of excellent vocational-technical instructors working in business and industry. The ASTD *Membership Directory* was used to identify a pool of individuals who had titles such as training manager, vice president of human resources, and training supervisor. Although titles can be misleading, these people were selected based on the assumption that it was likely they would be involved in the evaluation of trainers. This pool was then narrowed by cross-referencing with the list of Fortune 500 companies. These companies were selected because they reflect large and successful firms in the United States. A random sample of five-hundred managers was selected for participation in this survey based on the above criteria.

Postsecondary Institutions

A random sample of five-hundred vocational-technical department heads/chairs from community colleges and technical institutes throughout the United States was selected for participation in developing the profile of excellent two-year postsecondary vocational-technical instructors. These people were selected from a national mailing list based on the assumption that they would have responsibility for the direction and evaluation of instructors. Approximately sixty percent of the respondents (and, therefore, the instructors described by them) were employed at institutions with enrollments of less than five-thousand students. Approximately thirty-four percent of the respondents were employed at institutions with enrollments between five thousand and twenty-five thousand and approximately six percent were employed at institutions with enrollments greater than twenty-five thousand students. The largest group of the respondents consisted of respondents employed at institutions in an urban setting (36.1%). However, both rural (31.6%) and suburban (32.3%) settings were represented in the group.

Secondary Institutions

A random sample of five-hundred vocational directors (selected from a commercially available national mailing list) from secondary level schools throughout the United States was selected for participation in the study to develop the profile of excellent secondary level vocational-technical teachers. Again, these individuals were assumed to have responsibility for the direction and evaluation of vocational teachers. Approximately twenty-two percent of the respondents were employed at high schools with less than five-hundred students enrolled. Approximately forty-seven percent of the respondents were employed at high schools with enrollments between five- and fifteen-hundred students. Twenty-six percent were from high schools with enrollments between fifteen- and twenty-five hundred students and almost five percent were employed at high schools with enrollments greater than twenty-five hundred. A majority of the respondents were employed at high schools in rural settings (40.5%). However, 37.8% of the respondents were employed at suburban high schools and 21.7% at urban high schools. A conscious effort was made to avoid self-report data. That is, individuals in supervisory positions were asked to identify and rate subordinates for the purpose of identifying the traits of excellent instructors. This may have resulted in an oversampling of schools with a population of between five- and fifteen-hundred students.

Instrumentation

The instrument used in the three studies was constructed to allow respondents to describe the demographic and psychological characteristics of excellent vocational instructors working either in business and industry or postsecondary and secondary institutions. Draft copies of the instrument and cover letter were submitted to a panel of University of Illinois experts specializing in vocational-technical education, HRD, instructor evaluation, and survey research to obtain reactions and suggestions regarding demographic items and instrument layout.

The instrument had three discrete sections. Only section one, designed to collect demographic information, varied among the three studies. For the business and industry study, the following eight demographic variables were investigated: (1) gender, (2) age, (3) educational level, (4) educational field, (5) tenure with organization, (6) number of years in current position, (7) number of years in the training and development field, and (8) opportunity for career advancement. In both the secondary and postsecondary studies, the following eight demographic variables were investigated: (1) gender, (2) age, (3) educational level, (4) tenure with the institution, (5) number of years in the vocational teaching field, (6) vocational program area, (7) school enrollment, and (8) school setting.

The second and third sections were standardized psychological instruments: Spectrum I (in section two) and the Adult Personality Inventory (in section three). Both instruments were used to create three model profiles of the excellent vocational instructors. Respondents were asked to select which of the paired traits more accurately described the selected excellent vocational instructor in their organization or institution. A model of the excellent vocational instructor was developed based on the identification of a number of superior individuals by an equally large number of independent judges. A brief discussion of validation of each instrument follows.

Section two is the decision model version of the Spectrum I instrument (Braskamp & Maehr, 1987). This instrument provides a measure of four basic motivational factors: accomplishment, recognition, power, and affiliation. The median reliability coefficient for Spectrum I survey scales is 0.82. Norms are based on a national sample of over one-thousand adults tested in 1983 or later. The four scales measured by Spectrum I are best interpreted as the personal values people consider important and worthwhile. They were

empirically developed by factor analysis, but they correspond to dimensions identified in other studies of basic human and work values (Maehr & Braskamp, 1986).

Section three of the instrument asked participants to complete the decision model version of the Adult Personality Inventory (API) (Krug, 1985). The validity of the API lies in its ability to measure a set of sixteen traits that form the basis of an extensive theory of personality forwarded by Cattell and his associates in the 1940s and of the 16PF inventory developed on the basis of that theory (Cattell, Eber, & Tatsuoka, 1970). With more than two-thousand citations in the professional literature supporting the idea that these traits help predict a broad spectrum of human behavior, the 16PF is one of the most extensively researched instruments currently in use. However, the 16PF was not without problems, and a number of derivative instruments have been developed that address the shortcomings of the 16PF. The API is one of those derivative instruments.

According to Krug (1990), the API differs from the 16PF in the way the results are reported. Instead of using the standard sixteen scales, the API reports results along twenty-one dimensions that reflect seven personal characteristics, eight interpersonal orientations, and six career preferences.

The scales for the seven personal characteristics (extroverted, adjusted, tough-minded, independent, disciplined, creative, and enterprising) are similar to second-order trait scales found in the 16PF (Krug & Johns, 1986). The first five of these traits are similar to the structure of personality agreed upon by many theorists (Costa & McCrae, 1985; Goldberg, 1981; Norman, 1965). The eight scales corresponding to interpersonal styles (caring, adapting, withdrawn, submissive, uncaring, nonconforming, sociable, and assertive) are drawn from comparisons between the trait systems of Cattell and Murray. The six scales for career choice, job satisfaction, and life-style preferences (practical, scientific, aesthetic, social, competitive, and structured) are based on a large-scale discriminant analysis of people in a wide variety of occupations. This set of scales has been observed to overlap the scales in the Holland taxonomy (Ahadi, 1990).

The instruments allowed the construction of an objective profile based on the observations of a relatively large number of judges. The paired comparison format results in a series of judgments regarding the relative importance of various traits. For example, if respondents repeatedly select characteristic A over characteristics B, C, and D, then

characteristic A is more important than the others in describing the personality and motivational orientation of the excellent vocational teachers.

Note that in sections two and three of each instrument the use of the decision model version of the API/Spectrum instruments, although probably more appropriate for the outside rater, places constraints on the resulting profiles that do not exist if the self-report version of the questionnaires are used. For example, although an individual could score high on all scales, the paired comparison version does not permit this. For one scale to be judged highly important, other scales must be judged less important. By forcing the rater to make a qualitative judgement between two traits, it forces a choice of the stronger or more observable trait (Krug, 1990). Nevertheless, the paired comparisons of the decision model versions of the API/Spectrum instruments are more appropriate for collecting evaluations by outside raters not in a position to answer the self-report questionnaire items reliably.

Pilot Testing and Data Collection

Following the review by the expert panel, the instrument and cover letters were revised and pilot tested with supervisory practitioners with recognized expertise from each of the three settings. These experts, representing private business and industry and selected secondary and postsecondary schools, were asked to give opinions and make specific suggestions regarding the form and format of the letter and the instrument. A final draft of each instrument was prepared based on these suggestions.

In all three studies, the instrument was enclosed with a cover letter personally addressed to the recipient. Participants were first directed to decide who among their current staff was the best vocational instructor. Without revealing the identity of the individuals, participants completed the four-page instrument comprised of the three sections described previously. Approximately fifteen to thirty minutes were required to complete the instrument. Respondents were assured their responses would be kept confidential and that information would be reported in aggregate form only. Nonrespondents were sent a follow-up letter and additional instrumentation approximately three weeks after the initial mailing.

Data Analysis

Data analysis consisted of two phases. During the first phase, data from each of the three studies was analyzed and summarized to produce psychological profiles of vocational instructors identified as excellent in each of the three settings. During the second phase, the three profiles were compared to determine similarities and differences.

Three separate profiles were developed by analyzing data from each of the three studies with regard to thirty-three descriptive variables defining characteristics of excellent vocational instructors in the three settings. Of these thirty-three variables, eight are demographic and the rest are psychological. In each study, the data was coded and entered into the MetriTech program for evaluating the API/Spectrum instruments. The standardized mean score for the general adult population on these measurement scales is standardized at 5.50 with a standard deviation of 2.00.

Frequency analyses of the demographic variables were used to describe those specific characteristics of the excellent vocational instructors. Differences were determined at the .05 significance level between the demographic and psychological variables using the one-way analysis of variance calculations. Where significant differences were found, Scheffe's mean separation procedure was conducted at the .05 significance level. Meaningful and statistically significant results of these analyses are reported here to illustrate specific trends or diversity found in the sample of vocational instructors identified as excellent.

Results

Of the five-hundred instruments mailed in each study 204 usable instruments (40.8%) were returned for the business and industry profile, 266 usable instruments (53.2%) for the postsecondary profile, and 250 usable instruments (50.0%) for the secondary profile.

Results of the data analysis follow and are presented in reference to each of the variables studied. In a few cases because of missing data, frequencies do not total the number of instruments received. The first section focuses on the demographic characteristics of the vocational instructors identified as excellent in each setting. Sections

which highlight and compare the psychological profiles of the instructors follow. These sections cover the personal, interpersonal, career factors, and motivational characteristics of the vocational instructors identified as excellent. A comprehensive table (Table 1) is included on page 57 which provides for each psychological trait and for each instructor group the means, standard deviations, and f-values depicting whether the means are significantly different from the general adult population.

Demographic Characteristics

As stated earlier, eight demographic variables were examined in each of the three preliminary studies. However, only five of the eight demographic variables were investigated in *all* three studies. Those five variables include age, gender, tenure, educational level, and number of years in the field. Three variables were the same for both the postsecondary and secondary vocational instructor groups. Those variables include vocational program area, institution size, and institution setting.

The groups of excellent vocational instructors identified by respondents in each of the settings were predominantly male (62%), although in differing proportions for each group. Sixty-eight percent of the instructors described by respondents from business and industry are male and sixty-five percent from the postsecondary setting are male. However, only slightly more than half (52%) of the instructors identified in the secondary setting are male.

Excellent vocational instructors in all three settings appear to possess similar educational attainment levels. A majority in each group obtained a master's degree, with postsecondary vocational instructors having the largest percentage of master's degree holders (57%). Similarly, the majority (55.8%) of secondary vocational instructors have also earned master's degrees, while 43.6% of the trainers identified in business and industry have earned master's degrees.

Tenure (or number of years with the company or institution) varied widely among the three groups, especially between the business and industry group and the school groups. In each setting, the number of years excellent vocational instructors have been with their current organization ranges from less than five years to more than thirty years. However, only thirty-three percent of the vocational instructors identified in business and industry have been employed with the same company for more than ten years with thirteen

percent of this group being employed for only one year or less. Conversely, for excellent postsecondary vocational educators, sixty-one percent of the vocational instructors identified have been employed with the same institution for more than ten years. For the secondary group, 65.2% of the vocational instructors identified have been employed with the same institution for more than ten years. Almost twenty percent of this group has been employed with the same institution for more than twenty years.

Number of years in the field also varied substantially among vocational instructors from the various settings. Number of years in the field for those instructors identified as excellent in business and industry ranged from one to twenty-five years with a mean of 8.2 years. Seventy-five percent of the business and industry instructors have been in the field ten years or less. It is interesting to note that the average age for this group is nearly forty-one years, suggesting that they did not begin their careers in the education and training field. Number of years in teaching for those instructors identified as excellent at the postsecondary and secondary levels ranged from less than five to more than thirty years. For the postsecondary group, 51.5% of the identified instructors have been teaching for ten to twenty years. Similarly, a majority (54.4%) of the secondary instructors have been teaching for fifteen to twenty-five years.

Vocational teaching area was identified for the postsecondary and secondary vocational educator groups. The following is a percentage breakdown of the postsecondary vocational instructors identified by vocational program area: technical and trades (20.7%), medical and allied health (19.6%), business (16.2%), agriculture (10.6%), industrial technology (9.1%), public service (7.2%), and home economics (6.8%).

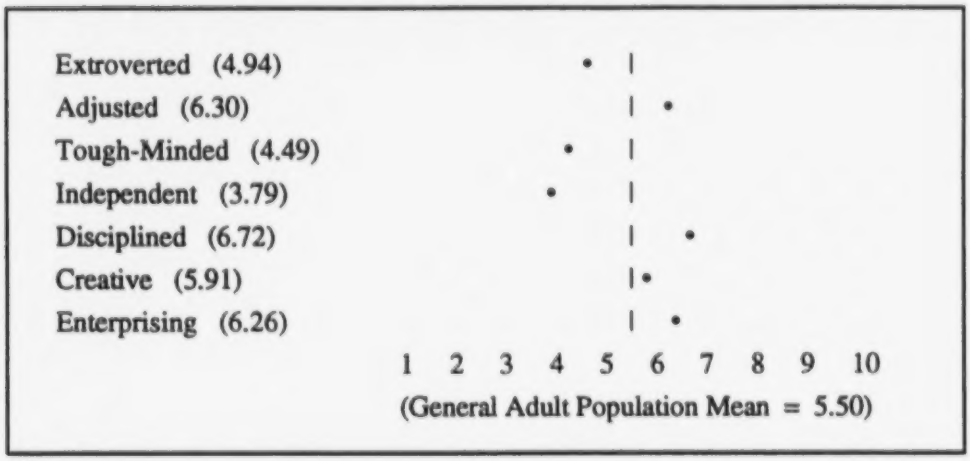
The following is a percentage breakdown of vocational teachers identified at the secondary level by program area: business (37.6%), industrial technology (25.2%), home economics (18.4%), agriculture (12.4%), and medical and allied health (1.2%). The following is a somewhat corresponding breakdown by degree category for vocational instructors identified as excellent in business and industry settings: While a majority (24.1%) of the trainers identified held business/management degrees, a variety of other degree categories were represented. Those include education (26.7%, approximately one-fifth of these are in vocational and technical education), liberal arts and sciences (11.3%), science/engineering (11.3%), HRD (10.8%), and psychology (6.2%). Almost ten percent

of the respondents did not identify a degree category for the excellent trainer they described.

Personal Characteristics

Collectively, the vocational educators identified as excellent were rated above the general population mean on the *adjusted, disciplined, creative*, and *enterprising* scales and were rated below the general population mean on the *extroverted, tough-minded,* and *independent* scales (see Figure 1).

Figure 1
Summary Profile for Personal Characteristics



Vocational instructors identified as excellent appear to possess a profile different from the general adult population on several important dimensions. Descriptions provided for each of the personal characteristics scales (Krug, 1985) indicate the following for scores in these ranges: As a whole, the vocational instructors identified are stable, calm, intuitive, and sensitive. They are team players who take direction well, prefer working in an ensemble setting, and are concerned with group standards. They approach their work in a rational yet compassionate manner. In addition, these individuals are creative and imaginative, rising up to meet and exceed the challenges of their profession. They perform well under stressful conditions and are confident they can handle most situations. The self-disciplined nature they possess provides strong motivation toward career success and goal attainment.

There were significant differences among the three groups' ratings on four of the seven dimensions: *extroverted, adjusted, disciplined,* and *creative*. However, there were no significant differences among the groups' ratings on the *tough-minded, independent,* and *enterprising* scales.

Extroverted

High scores in this dimension indicate outgoing and sociable people. They tend to have more friends and prefer to be with people rather than being alone. Low scores indicate the person is viewed as being more withdrawn and tending to avoid prolonged interaction with others.

Vocational instructors identified as excellent from business and industry were not rated significantly different from the general population mean. However, both the postsecondary and secondary groups were rated significantly below the general population mean. On the *extroverted* scale, results of the ANOVA (AN*alysis Of* VA*riance*) ($p = .0001$) indicate that the business and industry vocational educators were rated significantly higher (5.52) than their counterparts in both postsecondary (4.73) and secondary (4.68) institutions.

Adjusted

High scores on this scale indicate people viewed as stable, calm, and secure. They are likely to perform well under stressful conditions. They are not easily upset and usually bounce back fast after a loss or failure. Low scores indicate a person who has a variety of problems and complaints, is often described as tense and anxious, is easily upset, and feels self-conscious in groups.

Although there were differences found among the groups' ratings, all three groups were rated significantly above the general population mean on the *adjusted* scale. Results of the ANOVA ($p = .015$) indicate that both postsecondary (6.25) and secondary (6.60) vocational educators were rated significantly higher than the business and industry instructors (6.00).

Disciplined

High scores in this dimension indicate people viewed as controlled, careful, self-disciplined, organized, and respectful. They are concerned about finishing what they start and are very conscious of group standards of behavior. They believe in work before play and prefer to plan things out ahead of time. Low scores on this dimension indicate a perception of a certain lack of self-control necessary to seeing things through to the end. They are viewed as being open and flexible in their attitudes but are also likely to be characterized as disorganized, messy, impractical, and impulsive.

Each of the three groups of vocational instructors were rated significantly above the general population mean on the *disciplined* scale. According to the ANOVA results ($p = .0001$), the ratings for each group on the *disciplined* scale were significantly different from one another. The secondary level instructors were rated significantly higher (7.30) than either the postsecondary (6.66) or the business and industry (6.09) instructors.

Creative

High scores on this scale indicate individuals viewed as imaginative, sensitive, and liberal. They find conventional approaches limiting and prefer to explore new ideas and methods. They are generally uncomfortable when their freedom to explore other ways of doing things is restricted. Low scores on this dimension indicate people viewed as practical and down-to-earth. They prefer to deal with concrete problems rather than abstractions and have a lot of respect for authority.

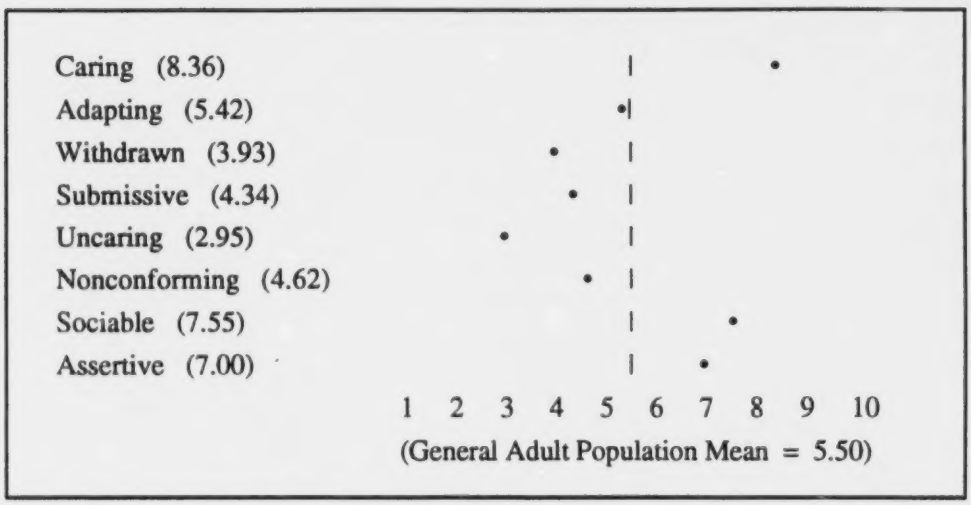
While the secondary vocational instructors were not rated significantly different from the general population mean on the *creative* scale, both the business and postsecondary instructors were rated significantly above the general population mean. Results of the ANOVA ($p = .0001$) indicate secondary vocational instructors were rated significantly lower (5.33) than their counterparts in both postsecondary institutions (6.05) and in business and industry (6.46) on the *creative* scale.

Interpersonal Style

Collectively, the vocational educators identified as excellent were rated above the general population mean on the *caring*, *sociable*, and *assertive* scales and were rated below

the general population mean on the *adapting, withdrawn, submissive, uncaring,* and *nonconforming* scales (see Figure 2).

Figure 2
Summary Profile for Interpersonal Style



When vocational instructors interact with other people, they appear to utilize different interpersonal styles than the general population. Descriptions provided for each of the interpersonal style scales (Krug, 1985) indicate the following for scores in these ranges: The vocational instructors identified as excellent in this study can be described as warm, affiliative people who tend to take charge in social settings. Their secure, flexible nature allows them to accept criticism and relate openly to others. These individuals view themselves as coaches helping students to fulfill their goals by providing knowledge, support, and expertise.

There were significant differences among the three groups' ratings on four of the eight interpersonal style dimensions: *adapting, withdrawn, nonconforming*, and *assertive*. However, there were no significant differences among the groups' ratings on the *caring, submissive, uncaring*, and *sociable* scales.

Adapting

People who score high on this dimension are viewed as being dependent on groups and as silent and undemonstrative. They are not particularly cheerful or optimistic. They prefer to take rather than give orders and they appear to be quiet and withdrawn.

On the *adapting* scale, business and industry vocational instructors were rated significantly below the general population mean while ratings for both the postsecondary and secondary instructors did not deviate significantly from the general population mean. Results of the ANOVA ($p = .010$) indicate the business and industry instructors were rated significantly lower (5.20) than their counterparts in both postsecondary (5.46) and secondary (5.58) institutions.

Withdrawn

People rated high on this scale can be described as submissive, fearful, introverted, undemanding, and insecure. They do not like being in charge of others and give in easily when confronted. They lack self-confidence and avoid challenges.

Ratings for all three of the groups on the *withdrawn* scale were significantly below the general population mean on this dimension. Results of the ANOVA ($p = .0007$) indicate that the business and industry instructors were rated significantly lower (3.63) than their counterparts in both postsecondary (3.92) and secondary (4.20) institutions.

Nonconforming

People rated highly on this scale are viewed as not being sensitive to rules. They are risk takers and are critical. They are nonconformists and may be viewed as being blunt in the way they interact with other people. They are strongly goal-oriented and further described as impractical, self-assured, forceful, impolite, domineering, and inconsistent.

Ratings for each of the three groups of instructors were significantly below the general population mean on the *nonconforming* scale. Results of the ANOVA ($p = .0001$) indicate that each of the groups was rated significantly different from the others with business and industry instructors rated the highest at 5.09, postsecondary instructors rated at 4.64, and the secondary instructors rated the lowest at 4.21.

Assertive

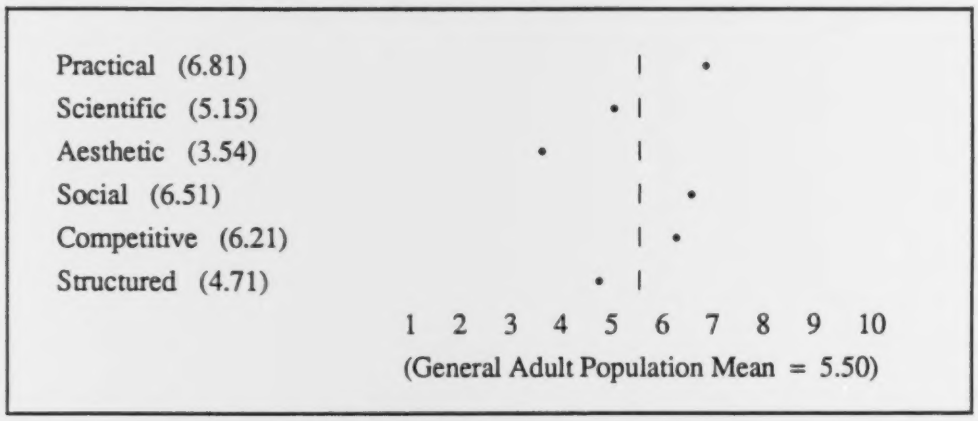
High scores on this scale describe take-charge people who actively attempt to control situations and frequently become leaders. They are often described as being forceful, companionable, self-confident, industrious, approachable, and dominant.

All three groups of instructors were rated significantly above the general population mean on the *assertive* scale. Results of the ANOVA ($p = .0053$) indicate that the business and industry instructors were rated significantly higher (7.31) than their counterparts in both postsecondary (6.88) and secondary (6.89) institutions.

Occupational Factors

Collectively, the vocational educators identified as excellent were rated above the general population mean on the *practical, social*, and *competitive* scales, while they were rated below the mean on the *scientific, aesthetic*, and *structured* scales (see Figure 3).

Figure 3
Summary Profile for Occupational Factors



When vocational instructors interact with other people, they appear to utilize different interpersonal styles than the general population. Descriptions provided for each of the interpersonal style scales (Krug, 1985) indicate the following for scores in these ranges: The vocational instructors identified as excellent in this study can be described as warm, affiliative people who tend to approach their tasks in a practical yet creative manner. These individuals can be described as down to earth and self-sufficient. Because of their caring,

sociable nature, they are most comfortable in roles that involve interaction with other people and prefer situations where they can be of service to others. In addition, these ambitious individuals possess a problem solving orientation which leads them to welcome the challenge of difficult problems and limiting realities.

There were significant differences among the three groups' ratings on five of the six dimensions: *practical, scientific, aesthetic, social,* and *structured.* However, no significant differences were found among the groups' ratings on the *competitive* scale.

Practical

High scores on this scale indicate people who are viewed as down-to-earth, confident, and self-sufficient. They are strongly oriented toward immediate problems and practical realities. Occupations in which people have been found as a group to score above average include nurse, cook, mechanic, janitor, and psychiatric aide.

On the *practical* scale, all three groups were rated significantly above the general population mean. Results of the ANOVA ($p = .0171$) indicate that the secondary instructors were rated significantly higher (7.10) than vocational instructors in business and industry (6.59) and postsecondary (6.71).

Scientific

People rated high on this scale are usually viewed as being dominant, willing to take chances, and flexible in their attitudes. High-scoring people are stimulated by opportunities to use their investigative and deductive skills to find solutions. Occupations in which people have been found as a group to score above average on this scale include engineer, psychologist, college professor, biologist, chemist, and physicist.

Both business and industry and secondary instructors' ratings fell significantly below the general population mean while postsecondary instructor ratings did not differ significantly from the general population mean on the *scientific* scale. Results of the ANOVA ($p = .0001$) indicate that postsecondary instructors were rated significantly higher (5.71) than their counterparts in secondary institutions (4.54) and business and industry (5.15). Regarding the postsecondary and secondary groups, results of the ANOVA ($p = .001$) indicate significant differences among the ratings for instructors from different

program areas. Industrial technology instructors received the highest *scientific* ratings (5.61 at the secondary level and 7.04 at the postsecondary level) and instructors in home economics were rated the lowest (3.47 at the secondary level and 4.05 at the postsecondary level).

Aesthetic

High scores on this scale indicate people with a combination of sensitivity and artistic and intellectual ability. They are viewed as willing to try new things but are not especially dominant. They are most comfortable in work situations that allow them to express their imagination and creativity without placing many demands on them. Occupations in which people have been found as a group to score above average include artist, writer, publication editor, and musician.

All three group ratings were significantly below the general population mean on the *aesthetic* scale. Results of the ANOVA ($p = .0001$) indicate that the business and industry instructors were rated significantly higher (4.15) than their counterparts in both postsecondary (3.44) and secondary (3.15) institutions. For both the postsecondary and secondary groups, results of the ANOVA ($p = .001$) indicate significant differences among the ratings for instructors from different program areas. In both settings, agriculture instructors received the lowest aesthetic ratings (2.41 for secondary instructors and 2.58 for postsecondary instructors) and home economics instructors received the highest ratings (4.20 for secondary instructors and 6.00 for postsecondary instructors).

Social

This scale measures a preference for working with other people. High scores indicate a person viewed as most comfortable in roles that interact with others, especially where they can be of service to others. Occupations in which people have been found as a group to score above average include nurse, social worker, school counselor, and sales manager.

Ratings on the *social* dimension for all three groups of instructors were significantly above the general population mean. Results of the ANOVA ($p = .0001$) indicate that the business and industry instructors were rated significantly higher (7.14) than their counterparts in both postsecondary (6.04) and secondary (6.49) institutions.

Structured

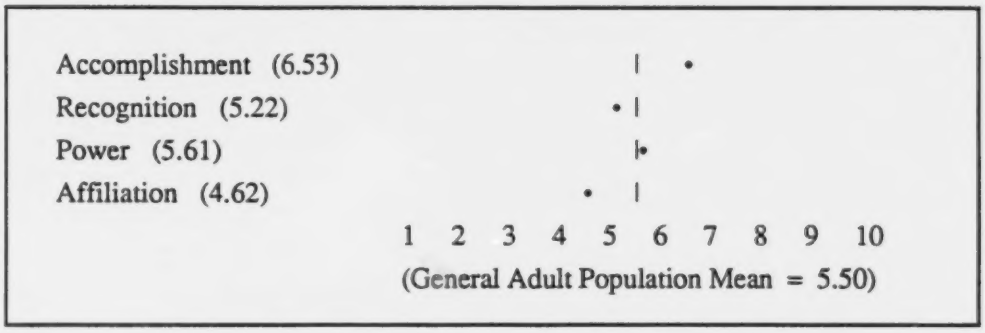
High scores on this scale indicate a person who is viewed as having a preference for well-defined activities and clear job requirements. They are described as followers and usually possess conventional attitudes. They are conservative and tend to be precise in the way they approach problems. Occupations in which people have been found as a group to score above average include accounting, retail store management, and flight attendant. The excellent vocational teachers were not rated significantly different (mean = 5.36) from the general population on this dimension.

On the *structured* scale, both business and industry and postsecondary instructors were rated significantly below the general population mean, while ratings for secondary instructors did not differ significantly from the general population mean. Results of the ANOVA ($p = .0001$) indicate that the business and industry instructors were rated significantly lower (3.79) than their counterparts in both postsecondary (4.82) and secondary (5.36) institutions.

Motivational Factors

Collectively, the vocational educators identified as excellent were rated above the general population mean on the *accomplishment* and *power* scales, while they were rated below the general population mean on the *recognition* and *affiliation* scales (see Figure 4).

Figure 4
Summary Profile for Motivational Factors



Vocational instructors seem to be motivated by exciting, challenging work that allows for a high level of involvement. Descriptions provided for each of the motivational

scales (Krug, 1985) indicate the following for scores in these ranges: Vocational instructors highly value respect and acknowledgment of their efforts. As a whole, this group is goal-oriented and receives satisfaction equally from both intrinsic and extrinsic rewards.

There were significant differences among the ratings for the three groups on the *accomplishment, power,* and *affiliation* scales. However, no significant differences were found among the groups' ratings on the *recognition* scale.

Accomplishment

This scale measures the extent to which people value exciting and challenging work. People who score highly on this scale are described as very involved in what they do. They are strongly goal oriented and often find themselves putting in extra hours to accomplish specific goals. Lower scores are indicative of people more comfortable with routine, established procedures. They do not need new tasks or constant stimulation to keep them challenged. They can be counted on to complete work regardless of their personal interest in it. They are not as task-oriented as those who score highly on this scale.

All three groups were rated significantly above the general population mean on the *accomplishment* scale. Results of the ANOVA ($p = .007$) indicate that the postsecondary instructors were rated significantly higher (6.65) than the business and industry instructors (6.36) but not significantly higher than the secondary instructors (6.54).

Power

This scale measures the extent to which people enjoy competing with one another for responsibility and authority. High scores on this scale describe individuals who are ambitious and competitive. They like to be in charge and strive for leadership positions. Popularity is less important than achievement, and they prefer competitive situations in which there are winners and losers. If they are not channeled into productive goals, their need to compete and their ambition may tend to alienate them from others. Low scores in this area indicate individuals who are viewed as having a more relaxed and easy-going lifestyle. They do not usually identify with competitive people or risk-takers. Acceptance

by others is more important to them than it is to higher-scoring people. They are viewed as team players.

Of the three groups, only the business and industry instructors were rated significantly different from the general population mean on the *power* scale. Results of the ANOVA ($p = .0001$) indicate that the business and industry instructors were rated significantly higher (5.96) than their counterparts in both postsecondary (5.50) and secondary (5.45) institutions.

Affiliation

This scale measures the extent to which people prefer to work as team members, see their job as providing the means to work comfortably with others, and emphasize the organization rather than the individual. High scores in this area indicate people who are usually very sensitive to the needs of others and place great emphasis on the quality of their relationships with others. They work best in team settings and generally trust people. They will frequently sacrifice personal gain for others. Low scores in this area indicate individuals who place little emphasis on personal relationships. They prefer to work alone and identify with self-sufficient people. They are occasionally viewed as being uncaring or unfeeling.

All three group ratings were significantly below the general population mean on the *affiliative* scale. Results of the ANOVA ($p = .0003$) indicate the secondary instructors were rated significantly higher (4.83) than instructors in business and industry (4.38).

Summary and Conclusions

The participants in this study have defined the personal, interpersonal, career preference, and motivational characteristics of vocational instructors identified as excellent and working in three distinctly different settings. The vocational teachers were rated as a group significantly different from the general population on most of the psychological variables examined. The vocational instructors in business and industry who were identified as excellent differ significantly from the general population on all the psychological variables except for *extroverted*. The vocational instructors in two-year postsecondary vocational-technical institutions identified as excellent were found to differ

significantly from the general population on all psychological variables except for *adapting*, *scientific*, and *power*. The secondary vocational teachers differ significantly from the general population on all psychological variables except for *creative*, *adapting*, *structured*, and *power*. These traits are roughly analogous to those more global characteristics identified by Wotruba and Wright (1975) and Irby (1978).

A comparison of the profiles indicated that, overall, the three groups are more similar than dissimilar. However, significant differences among the groups were also revealed. Further research should be aimed at obtaining information directly from instructors identified as excellent by supervisors, peers, and students.

The respondents who participated in this study have provided a profile that can assist in recruiting individuals with promise of excellence for vocational teaching assignments or for vocational teacher preparation programs. The profile describes subtleties associated with human interaction that the vocational directors and training managers judged to be associated with excellent teachers and trainers. On one hand, those instructors viewed as excellent by their superiors seem to be those who are disciplined and not very independent. On the other hand, they are described as adjusted, assertive, and enterprising. The respondents seem to have described individuals who can set and accomplish goals and work well with others within established parameters.

The profile presented here shows the relative importance the decisionmakers (vocational directors and training managers) place on certain characteristics. However, a degree of caution is necessary when interpreting the results. This study has helped to develop a profile that if emulated will allow vocational instructors to survive and be viewed positively by their directors. The results may tell more about supervisors' desire for loyalty and obedience than what constitutes excellent performance. No assumptions were made for this study about what is good teaching. The extent to which this study has helped to develop a profile by which to identify excellent vocational instructors—and therefore, to help in defining, describing, and reproducing good teaching—depends on the extent to which the profile of good instructors (i.e., good teaching) is similar to the profile provided here.

Table 1

Summary of Data for Each Group of Instructors

Psychological Traits	Mean			F	p-value
	Business and Industry	Postsecondary	Secondary		
Personal Characteristics					
Extroverted	5.52	4.73	4.68	9.2838	.0001*
Adjusted	6.00	6.25	6.60	4.2240	.0150*
Tough-Minded	4.27	4.63	4.54	2.2245	.1089
Independent	3.87	3.93	3.58	1.7624	.1724
Disciplined	6.09	6.66	7.30	19.3601	.0000*
Creative	6.46	6.05	5.33	12.3937	.0000*
Enterprising	6.27	6.21	6.29	0.0911	.9129
Interpersonal Style					
Caring	8.13	8.43	8.46	2.7102	.0672
Adapting	5.20	5.46	5.58	4.6273	.0101*
Withdrawn	3.63	3.92	4.20	7.3665	.0007*
Submissive	4.38	4.32	4.32	0.1521	.8589
Uncaring	2.76	3.01	3.05	1.9075	.1492
Nonconforming	5.09	4.64	4.21	20.1474	.0000*
Sociable	7.53	7.55	7.53	0.0144	.9857
Assertive	7.31	6.88	6.89	5.2871	.0053*
Career Factors					
Practical	6.59	6.71	7.10	4.0943	.0171*
Scientific	5.15	5.71	4.54	18.1399	.0000*
Aesthetic	4.15	3.44	3.15	10.7148	.0000*
Social	7.14	6.04	6.49	11.8605	.0000*
Competitive	6.13	6.17	6.31	0.3769	.6861
Structured	3.79	4.82	5.36	19.3878	.0000*
Motivational Factors					
Accomplishment	6.36	6.65	6.54	4.9996	.0070*
Recognition	5.26	5.22	5.19	0.4352	.6473
Power	5.96	5.50	5.45	15.5717	.0000*
Affiliation	4.38	4.61	4.83	8.3355	.0003*

* Significant at alpha = .05

APPROPRIATENESS OF THE CONTENT OF VOCATIONAL TEACHER EDUCATION PROGRAMS FOR PREPARING TOMORROW'S BUSINESS AND INDUSTRY TRAINERS

Introduction

Vocational teacher education programs have traditionally prepared teachers for work in secondary schools in specific service areas such as agriculture or business education. However, rapid growth of education and training programs in the private sector has created an increasing number of education and training positions for vocational educators.

The curriculum of business and industry has broadened in recent years to more closely parallel that of the nation's schools and colleges. The content of business and industry training can be categorized into five major areas: basic skills instruction; management and supervisory training; technical skills instruction; sales, service, and customer relations training; and general education. With the exception of general education, which includes education for personal enrichment, each of these categories can be considered vocational-technical education.

Deficiencies in basic skills usually become immediately apparent in the workplace. Even though many companies screen applicants for employment, they find it necessary to provide remedial education in reading, writing, and arithmetic. Much of the basic skills instruction is conducted within the context of specific job skills training. The most common type of employer-sponsored training in the United States is management and supervisory training, which is a major focus of the vocational business education curriculum. Technical training ranges from high school level subject matter to the most advanced postgraduate level courses: from apprentice trade programs and on-the-job learning to sophisticated courses in highly specialized fields. Training for sales and service has long been a part of company education programs. However, accelerated product changes resulting from advances in technology and the shift toward service and information industries has created even more emphasis in this area.

Accompanying this unprecedented commitment to employer training is an increasing awareness of the need for professionals to design and conduct that training. In the past, most trainers were selected from within the organization because they had specialized knowledge to pass on to coworkers. However, these individuals had little or

no knowledge of nor expertise in training and were expected to learn teaching skills on the job. This unstructured education, once the norm in the field of training, is no longer sufficient to meet the needs of most organizations (Palmer, 1989). Today, many organizations are attempting to ensure the effectiveness of their training personnel by providing them with organized, formal training programs and activities.

In addition, many employees currently working in training are interested in pursuing degrees with a program emphasis in training or HRD. Not surprisingly, there has been a marked increase in the number of training and development programs offered by higher education institutions (Palmer, 1989). In 1976, the American Society for Training and Development compiled a list of thirty-six universities, colleges, junior colleges, and institutes which offered programs in training and development. By 1983, the ASTD listing of such programs had grown to seventy-three programs at the master's level alone (Venable, 1985).

Almost twenty percent of the trainers working in business and industry have degrees in education and teaching experience (Lee, 1985). Results of a survey conducted by Pace, Peterson, and Porter (1986) indicate that schools of education are the predominant setting for programs in training and development, and vocational education departments are listed as a primary source of such programs. In 1989, the ASTD Professors Network developed a partial listing of programs. Of the twenty-seven programs listed in the *Directory of HRD Academic Programs*, almost thirty percent are offered through vocational education departments (ASTD, 1989b).

The Problem and Purpose of the Study

The roles of vocational educators in business and industry are distinctly different from those of vocational educators employed in secondary public schools. As training and development programs become increasingly prominent in business and industry and vocational teacher education programs take on the expanded role of preparing professionals for training and development positions, vocational teacher education programs must change accordingly. It is imperative that the evolving curriculum embrace the knowledge base and skills required to perform this new role successfully.

The primary purpose of this study was to determine the extent to which vocational teacher education programs include appropriate knowledge and skill training to successfully prepare vocational educators for training positions in business and industry. More specifically, the intent was to assess the perceptions of vocational teacher educators regarding the importance of a variety of competencies for graduates of their vocational teacher education programs. In addition, the vocational teacher educators were asked to provide estimates of the extent to which these competencies are covered in students' coursework.

Procedures

A survey of vocational teacher educators from the twenty-one University Council for Vocational Education (UCVE) institutions was conducted during the winter of 1991. A mail questionnaire was constructed which asked respondents to indicate perceived importance and coverage related to twenty-five training and development competencies. The list of competencies was derived primarily from those identified in the American Society for Training and Development (ASTD) sponsored study *Models for HRD Practice* (McLagan, 1989).

Department chairs/heads from each of the UCVE institutions were contacted and asked to identify appropriate faculty members or program heads representing each vocational curriculum housed in their department (e.g., agriculture and business/marketing) to complete the questionnaire. Each respondent was asked to return the questionnaire directly to the researcher via the return envelope provided. Respondents were assured in the cover letter that accompanied the questionnaire that responses would be held in strict confidence and results would be reported in aggregate form only.

Instrumentation

A three-column questionnaire was developed for the study. A list and brief definition of each of the twenty-five competencies to be assessed was provided in the middle column of the questionnaire. In column one, respondents were asked to estimate the extent to which each competency is covered in students' coursework. In column three, respondents were asked to rate the importance of each competency for graduates of their vocational teacher education program. All of the competencies except *evaluation skill,*

media selection skill, and *budget and resource management skill* were derived from the *Models for HRD Practice* study. These three competencies were included because they have been identified as important in other prominent research in the field (IBSTPI, 1988; McLagan, 1983). The competencies were presented on the questionnaire in the four major categories identified in the *Models for HRD Practice* study: technical, business, interpersonal, and intellectual. Although the *Models for HRD Practice* study identified thirty-five competencies, thirteen were omitted because they were deemed too vague or too complicated to be accurately described on the questionnaire. Following is a listing of the twenty-five competencies and the brief description which appeared on the questionnaire.

Technical Competencies

1. *Adult-Learning Understanding*—knowing how adults acquire and use knowledge, skills, and attitudes; understanding individual differences in learning.

2. *Career Development Theories and Techniques Understanding*—knowing the techniques and methods used in career development; understanding their appropriate uses.

3. *Competency Identification Skill*—identifying the knowledge and skill requirements of jobs, tasks, and roles.

4. *Computer Competence*—understanding or using computer applications.

5. *Electronic-Systems Skill*—having knowledge of functions, features, and potential applications of electronic systems for the delivery and management of HRD.

6. *Evaluation Skill*—determining the effectiveness of training and its impact on the organization.

7. *Media Selection Skill*—selecting and utilizing appropriate media and methods according to the dictates of the learning situation.

8. *Objectives Preparation Skill*—preparing clear statements that describe desired outputs.

9. *Training and Development Theories and Technique Understanding*—knowing the theories and methods used in training; understanding their appropriate uses.

10. *Research Skill*—selecting, developing, and using methodologies such as statistical and data collection techniques for formal inquiry.

Business Competencies

11. *Budget and Resource Management Skill*—utilizing, prioritizing, and managing financial, material, and human resources in an efficient manner.

12. *Business Understanding*—knowing how the functions of a business work and relate to each other; knowing the economic impact of business decisions.

13. *Organization Behavior Understanding*—seeing organizations as dynamic, political, economic, and social systems that have multiple goals; using that larger perspective as a framework for understanding and influencing events.

14. *Organization-Development Theories and Techniques*—knowing the techniques and methods used in organization development; understanding their appropriate use.

Interpersonal Competencies

15. *Coaching Skill*—helping individuals recognize and understand personal needs, values, problems, alternatives, and goals.

16. *Feedback Skill*—communicating information, opinions, observations, and conclusions so that they are understood and can be acted upon.

17. *Group-Process Skill*—influencing groups so that tasks, relationships, and individual needs are addressed.

18. *Negotiation Skill*—securing "win-win" agreements while successfully representing a special interest in a decision.

19. *Presentation Skill*—presenting information orally so that an intended purpose is achieved.

20. *Questioning Skill*—gathering information from and stimulating insight in individuals and other groups through the use of interviews, questionnaires, and other probing methods.

21. *Relationship-Building Skill*—establishing relationships and networks across a broad range of people and groups.

22. *Writing Skill*—preparing written material that follows generally accepted rules of style and form, is appropriate for the audience, is creative, and accomplishes its intended purpose.

Intellectual Competencies

23. *Data-Reduction Skill*—scanning, synthesizing, and drawing conclusions from data.

24. *Information-Search Skill*—Gathering information from printed and other recorded sources; identifying and using information specialists, reference services, and aids.

25. *Visioning Skill*—projecting trends and visualizing possible and probable futures and their implications.

Data Analysis

Using a four-point Likert-type scale, respondents were asked to indicate in column one of the questionnaire the extent to which they perceived each of the competencies is covered in students' coursework. Respondents were asked to rate each competency as either not covered (1), covered somewhat (2), covered adequately (3), or covered extensively (4). In column three, respondents were asked to rate the importance of each competency for graduates of their programs as either of no importance (1), not very important (2), somewhat important (3), or very important (4). Respondents were also asked to identify their vocational program area and to indicate their number of years in the field. The data was analyzed by program area to help answer the question of whether or not some vocational program areas, because of the nature of their fields, provide better coverage of the competencies than others.

The data was analyzed by computing mean responses for the perceived coverage of each of the competencies and for the perceived importance for each competency. The means for perceived coverage and perceived importance were then compared. One-way analysis of variance tests of significance were then conducted for each competency according to program area. Differences were determined at the .05 significance level.

Where significant differences were found, Scheffe's multiple comparison procedure was conducted at the .05 level.

Seven program areas were identified for analysis: (1) agriculture, (2) business/marketing, (3) health, (4) home economics, (5) industrial education, (6) technology, and (7) "other." The program area titled "other" is comprised of respondents who classified their program areas as adult education, general vocational education, and career exploration.

Results

Seventy-five usable questionnaires were returned for analysis from twenty of the twenty-one UCVE institutions. The following is a percentage breakdown of respondents according to their program area: agriculture (20.0%), business/marketing (22.6%), health (6.7%), home economics (17.4%), industrial education (20.0%), technology (8.0%), and other (5.3%). Responses were received from fifteen of the sixteen institutions offering agriculture programs, seventeen of the twenty offering business/marketing programs, thirteen of the eighteen offering home economics programs, five of the eight offering health occupations programs, fifteen of the eighteen offering industrial education programs, and six of the ten offering technology education programs.

The university professionals surveyed in this study perceived twenty of the twenty-five competencies included in the questionnaire to be at least somewhat important. *Objectives preparation skill* and *presentation skill* were rated the most important competencies of those listed. *Research skill*, on the other hand, was rated as the least important competency of those listed.

Regarding extent of coverage, only seven of the competencies were considered to be covered at least adequately. *Objectives preparation skill* and *presentation skill* received the highest coverage rating. *Electronic-systems skill* was rated as the least covered of the competencies listed. Mean ratings and standard deviations for perceived importance and extent of coverage for each of the twenty-five competencies are reported in Table 2.

Table 2

Mean Ratings and Standard Deviations for Extent of Coverage and Perceived Importance of Competencies

Competency	Extent of Coverage		Perceived Importance	
	Mean*	SD	Mean**	SD
Technical Competencies				
Adult-Learning Understanding	2.52	.77	3.29	.71
Career Development Theories and Technical Understanding	2.36	.67	3.04	.62
Competency Identification Skill	3.04	.81	3.50	.72
Computer Competence	2.82	.81	3.55	.55
Electronic-Systems Skill	2.02	.80	2.78	.82
Evaluation Skill	2.85	.74	3.52	.64
Media Selection Skill	3.08	.69	3.37	.58
Objectives Preparation Skill	3.61	.56	3.75	.43
Training and Development Theories and Techniques Understanding	2.66	.93	3.22	.78
Research Skill	2.32	.87	2.75	.80
Business Competencies				
Budget and Resource Management Skill	2.16	.82	3.02	.84
Business Understanding	2.31	.89	2.91	.89
Organization Behavior	2.36	.91	3.06	.84
Organization-Development Theories and Techniques	2.22	.86	2.79	.86
Interpersonal Competencies				
Coaching Skill	2.89	.85	3.41	.64
Feedback Skill	3.04	.72	3.54	.55
Group-Process Skill	2.91	.84	3.53	.60
Negotiation Skill	2.09	.79	2.95	.80
Presentation Skill	3.60	.49	3.76	.42
Questioning Skill	3.24	.75	3.61	.59
Relationship-Building Skill	2.94	.94	3.53	.64
Writing Skill	3.01	.65	3.69	.54
Intellectual Competencies				
Data Reduction Skill	2.45	.70	3.16	.72
Information-Search Skill	2.85	.71	3.40	.70
Visioning Skill	2.25	.73	3.12	.79

* Mean based on four-point scale:
4 Covered Extensively
3 Covered Adequately
2 Covered Somewhat
1 Not Covered

** Mean based on four-point scale:
4 Very Important
3 Somewhat Important
2 Not Very Important
1 No Importance

Results of the ANOVA indicate that two of the competencies, *competency identification skill* and *business understanding skill*, were rated significantly different by respondents from various vocational program areas for both extent of coverage and perceived importance. Seven competencies were rated significantly different by respondents from different vocational program areas for extent of coverage; one competency, *computer competence*, was rated significantly different by respondents from various vocational program areas for perceived importance.

Significant differences in ratings between the respondents from various vocational program areas determined by the ANOVA are presented in Tables 2 through 11. Results of the Scheffe procedure for determining significant differences between ratings provided by respondents representing different program areas are noted. In a few cases, frequencies do not total seventy-five as a result of missing data.

Technical Competencies

Technical competencies are defined as the functional knowledge and skills required for success in the training and development field (McLagan, 1989). Four of the fourteen technical competencies included in this survey were rated significantly different by respondents from various vocational programs areas.

Results of the ANOVA indicate significant differences ($p = .016$) in mean ratings on the extent of coverage scale for the *adult-learning understanding* competency among respondents from various vocational program areas. However, the more conservative Scheffe procedure did not indicate significant differences. Mean ratings and standard deviations for extent of coverage of *adult-learning understanding* are presented in Table 3.

Table 3

Mean Ratings and Standard Deviations for Extent of Coverage of *Adult-Learning Understanding* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	2.87	.83
Business/Marketing	17	2.29	.77
Health	5	2.60	.54
Home Economics	13	2.31	.63
Industrial Education	15	2.93	.70
Technology	6	2.16	.75
Other	4	1.75	.50

Results of the ANOVA indicate significant differences ($p = .019$) in mean ratings on the perceived importance scale for *computer competence* among respondents from various vocational program areas. However, the more conservative Scheffe procedure did not indicate significant differences. Mean ratings and standard deviations for perceived importance of *computer competence* are presented in Table 4.

Table 4

Mean Ratings and Standard Deviations for Perceived Importance of *Computer Competence* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	3.46	.51
Business/Marketing	17	3.94	.24
Health	5	3.20	.83
Home Economics	13	3.53	.51
Industrial Education	14	3.28	.61
Technology	6	3.66	.51
Other	4	3.50	.57

Results of the ANOVA indicate significant differences in mean ratings on the extent of coverage scale ($p = .008$) for *evaluation skill* among respondents from various vocational program areas. The significant differences were between ratings provided by respondents from health occupations programs and respondents from the "other" category.

Mean ratings and standard deviations for extent of coverage of *evaluation skill* are presented in Table 5.

Table 5
Mean Ratings and Standard Deviations for Extent of Coverage of *Evaluation Skill* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	2.93	.59
Business/Marketing	17	2.76	.75
Health	5	3.60*	.54
Home Economics	13	2.92	.64
Industrial Education	15	3.00	.84
Technology	6	2.50	.54
Other	4	1.75*	.50

* Significant differences determined by the Scheffe procedure are between these program areas

Business Competencies

Business competencies are defined as the management, economic, and administrative skills required for success in the training and development field (McLagan, 1989). Two of the four business competencies included in this survey were rated significantly different by respondents from various vocational programs areas. Results of the ANOVA indicate significant differences in mean ratings on the extent of coverage scale ($p = .001$) and on the perceived importance scale ($p = .001$) for *business understanding* among respondents from different vocational program areas. The significant differences were between ratings provided by respondents from business/marketing programs and respondents from home economics programs. Mean ratings and standard deviations for extent of coverage and perceived importance of *business understanding* are presented in Table 6.

Table 6

Mean Ratings and Standard Deviations for Extent of Coverage and Perceived Importance of *Business Understanding* by Vocational Program Area

Vocational Program Area	n	Extent of Coverage		Perceived Importance	
		Mean	SD	Mean	SD
Agriculture	15	2.26	.70	2.80	.67
Business/Marketing	17	2.94*	.89	3.58*	.71
Health	4	2.75	.50	3.50	.57
Home Economics	13	1.53*	.51	2.23*	.83
Industrial Education	15	2.26	.96	2.64	.84
Technology	6	2.16	.75	3.16	.75
Other	4	2.25	.95	2.75	1.25

* Significant differences determined by the Scheffe procedure are between these program areas.

Results of the ANOVA indicate significant differences (p = .012) in mean ratings on the extent of coverage scale for *organization behavior understanding* among respondents from various vocational program areas. However, the more conservative Scheffe procedure did not indicate significant differences. Mean ratings and standard deviations for extent of coverage of *organization behavior understanding* are presented in Table 7.

Table 7

Mean Ratings and Standard Deviations for Extent of Coverage of *Organization Behavior Understanding* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	2.46	.91
Business/Marketing	17	3.00	.79
Health	5	2.40	.89
Home Economics	13	2.15	.80
Industrial Education	15	2.06	.96
Technology	6	2.00	.63
Other	4	1.50	.57

Interpersonal Competencies

Interpersonal competencies required for success in the training and development field are defined as having a strong communications base (McLagan, 1989). Four of the eight interpersonal competencies included in this survey were rated significantly different by respondents from various vocational programs areas.

Results of the ANOVA indicate significant differences in mean ratings on the extent of coverage scale ($p = .004$) for *feedback skill* among respondents from various vocational program areas. The significant differences were between ratings provided by respondents from home economics programs and respondents from the "other" category. Mean ratings and standard deviations for extent of coverage of *feedback skill* are presented in Table 8.

Table 8

Mean Ratings and Standard Deviations for Extent of Coverage of *Feedback Skill* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	3.13	.51
Business/Marketing	17	3.11	.69
Health	5	3.40	.89
Home Economics	13	3.46*	.51
Industrial Education	15	2.80	.77
Technology	5	2.60	.54
Other	4	2.00*	.81

* Significant differences determined by the Scheffe procedure are between these program areas.

Results of the ANOVA indicate significant differences in mean ratings on the extent of coverage scale ($p = .001$) for *group-process skill* among respondents from various vocational program areas. The significant differences were between ratings provided by respondents from health occupations programs and respondents from technology programs. Mean ratings and standard deviations for extent of coverage of *group-process skill* are presented in Table 9.

Table 9

Mean Ratings and Standard Deviations for Extent of Coverage of *Group-Process Skill* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	3.00	.53
Business/Marketing	17	2.88	.69
Health	5	3.60*	.54
Home Economics	13	3.53	.66
Industrial Education	15	2.60	.91
Technology	5	2.00*	.89
Other	4	2.25	.95

* Significant differences determined by the Scheffe procedure are between these program areas.

Results of the ANOVA indicate significant differences in mean ratings on the extent of coverage scale ($p = .001$) for *questioning skill* among respondents from various vocational program areas. The significant differences were between ratings provided by respondents from home economics and respondents from industrial education, technology, and the "other" category. Respondents from the "other" category also rated the extent of coverage significantly lower than respondents from agriculture and health occupations programs. Mean ratings and standard deviations for extent of coverage of *questioning skill* are presented in Table 10.

Results of the ANOVA indicate significant differences ($p = .026$) in mean ratings on the extent of coverage scale for *relationship building skill* among respondents from various vocational program areas. However, the more conservative Scheffe procedure did not indicate significant differences. Mean ratings and standard deviations for perceived importance of *relationship building skill* are presented in Table 11.

Table 10

Mean Ratings and Standard Deviations for Extent of Coverage of *Questioning Skill* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	3.53**	.51
Business/Marketing	17	3.11	.78
Health	5	3.80**	.44
Home Economics	13	3.84*	.37
Industrial Education	15	2.93*	.70
Technology	5	2.40*	.54
Other	4	2.25*/**	.50

* Significant differences determined by the Scheffe procedure are between these program areas.

** Significant differences determined by the Scheffe procedure are also between these program areas.

Table 11

Mean Ratings and Standard Deviations for Extent of Coverage of *Relationship Building Skill* by Vocational Program Area

Vocational Program Area	n	Mean	SD
Agriculture	15	3.06	.59
Business/Marketing	17	2.70	.84
Health	5	3.00	1.00
Home Economics	13	3.69	.63
Industrial Education	15	2.80	1.14
Technology	5	2.20	1.09
Other	4	2.50	1.29

Comparative Differences Between Importance and Coverage

Comparative differences between the perceived level of importance and perceived extent of coverage for each of the twenty-five competencies included in the study are presented in Table 12. An analysis of the reported differences provides some interesting and useful information.

Table 12

Comparative Differences Between Perceived Level of Importance and Perceived Extent of Coverage for Twenty-Five Training and Development Competencies

Competency	Mean Importance*	Mean Extent of Coverage**	Difference Between Means
Visioning Skill	3.12	2.25	.87
Budget and Resource Management Skill	3.02	2.16	.86
Negotiation Skill	2.95	2.09	.86
Adult-Learning Understanding	3.29	2.52	.77
Electronic-Systems Skill	2.78	2.02	.76
Computer Competence	3.55	2.82	.72
Data Reduction Skill	3.16	2.45	.71
Organization Behavior Understanding	3.06	2.36	.70
Career Development Theories and Technology Understanding	3.04	2.36	.70
Writing Skill	3.69	3.01	.68
Evaluation Skill	3.52	2.85	.67
Group-Process Skill	3.53	2.91	.62
Business Understanding	2.91	2.31	.60
Relationship-Building Skill	3.53	2.94	.59
Organization-Development Theories and Techniques	2.79	2.22	.57
Training and Development Theories and Techniques Understanding	3.22	2.66	.56
Information-Search Skill	3.40	2.85	.55
Coaching Skill	3.41	2.89	.52
Feedback Skill	3.54	3.04	.50
Competency Identification Skill	3.50	3.04	.50
Research Skill	2.75	2.32	.43
Questioning Skill	3.61	3.24	.37
Media Selection Skill	3.37	3.08	.29
Presentation Skill	3.76	3.60	.16
Objectives Preparation Skill	3.61	3.75	.14

* Mean based on four-point scale:
4 Covered Extensively
3 Covered Adequately
2 Covered Somewhat
1 Not Covered

** Mean based on four-point scale:
4 Very Important
3 Somewhat Important
2 Not Very Important
1 No Importance

All of the competencies were rated as important, and for each of the competencies the mean rating for perceived importance was higher than the mean rating for extent of coverage. The greatest differences among the ratings were for *visioning skill, budget and resource management skill,* and *negotiation skill.* These are skills that have traditionally been omitted from teacher education programs. The least differences (although the competencies were rated as very important) were reported for *presentation skill* and *objective preparation skill.* These skills have traditionally been emphasized in teacher education programs.

Conclusion

It is important to note that thirteen of the twenty-five competencies reviewed in this study were rated by vocational teacher educators as important yet less than adequately covered in vocational teacher education programs. It appears that program development, in order to meet the needs of students preparing for careers in business and industry training, should focus, at least in part, on these competencies. Three competencies in the intellectual category are identified among the thirteen: *visioning skill, data reduction skill,* and *information search skill.* In the interpersonal category, the three competencies identified are *group process skill, relationship-building skill,* and *coaching skill.* Two competencies were identified in the business category: *budget and resource management skill* and *organization behavior understanding.* Five competencies were identified in the technical category: *adult learning understanding, computer competence, career development theories and techniques understanding, evaluation skill,* and *training and development theories and techniques understanding.* Further study is needed to determine the extent to which these competencies should be prioritized and sequenced and whether they are best taught at the undergraduate or graduate level.

Some statistically significant differences among ratings for extent of coverage of certain competencies were found among various vocational program areas. However, no clear patterns of differences in coverage emerged either for specific competencies or for categories of competencies. Apparently, what ever differences (real or assumed) there are in the "nature of the field" among vocational program areas do not affect the extent of coverage of either technical, business, interpersonal, or intellectual competencies.

Vocational teacher education departments are being called upon to become more involved in preparation of professionals for careers in training and development in nonschool settings such as the business community and government. In order for programs offered at these institutions to be relevant and viable, attention must be paid to the skills necessary to perform training and development roles and to the backgrounds of students who participate in the programs. An assumption that all skills taught in traditional vocational teacher education programs are the ones needed in the training and development field is probably inaccurate. Similarly, an assumption that the students preparing for careers in business and industry training have the same characteristics as traditional vocational teacher education candidates is probably inaccurate.

IMPLICATIONS FOR VOCATIONAL-TECHNICAL TEACHER PREPARATION

Investigation of what makes for good teaching, including the required understandings and competencies, is not a recent trend in educational research. There have been numerous efforts at discovering the secrets of high quality instruction. Despite the massive body of literature on teaching effectiveness which dates back many years, responsible and prominent educational researchers and practitioners disagree on what makes for effective teaching and whether or not it is possible to measure or predict effective teaching (Camp, 1988). There is even less certainty about what contributes to teaching effectiveness in the private sector. Almost all of the research on teaching effectiveness has focused on school settings.

Adults are now receiving the majority of vocational-technical instruction in America with an increasing emphasis being placed on training conducted in business and industrial settings. Business and industry provides training for most of the skills acquired after age twenty-five for the majority of people and accounts for eighty-five percent of the variation in lifetime earnings (American Society for Training and Development [ASTD], 1986). About one-third of the labor force, approximately forty million adults, receives some type of formal training in business and industry each year. Approximately 1.3 billion hours are spent annually in corporate classrooms (Feuer, 1988; Gordon, 1986; Lee, 1990). Within the next ten years three-quarters of Americans working today will need retraining (ASTD, 1990). High quality instructional performance of vocational educators working in the system is central to the effectiveness of this training. The sheer magnitude of business and industrial training efforts combined with the quest for quality in the current business climate demand more specific descriptions of effective teaching and effective preparation for teaching.

Private sector firms have become increasingly quality conscious. Product quality has emerged as the new standard for measuring the strength and performance of organizations. Accompanying the product quality movement is a corresponding concern for high quality training. Quality training is being viewed as more important and more powerful than ever before. It has never been more apparent that effective, high quality training can and must play a tremendous role in the revitalization of American business and industry. Indicative of the increasing concern for quality training is the American Society

for Training and Development's national campaign titled *Put Quality to Work: Train America's Workforce*. The campaign is dedicated to a single challenge: "to assure that America's workforce gets the level of workplace training that will lead to greater productivity, higher quality products and services, and increased national competitiveness" (ASTD, 1990). Schools of education, particularly vocational education departments, have an increasingly evident and important responsibility to provide leadership to ensure that individuals preparing for work in business and industrial settings are able to meet this challenge.

Formal certification programs exist for vocational educators working in the public schools, but that is not the case for vocational educators working in the business community. Many universities, colleges, institutes, and private firms which offer programs to prepare individuals for training and development positions in business and industry grant their own certificates. However, no formal, universally accepted trainer certification programs exist.

Concern for trainer preparation is common within the business community, but the extent to which and how companies ensure trainer quality varies. The training and development field needs leadership that could come from university vocational teacher education departments. Working within the general parameters of successful vocational teacher education models and with counsel from business and industrial advisory groups, vocational teacher education departments can help define the professional standards for entry into the field and develop mechanisms for promoting excellence. Vocational teacher education programs can assume leadership in assuring "quality control."

There were two specific incentives for conducting the research reported in this document. First, little was known about the relevance of existing vocational teacher preparation curricula in preparing instructors for business and industrial settings. Second, a clearer understanding of the makeup of successful, even exemplary, vocational instructors working in business and industry would enhance early identification and/or development of those individuals who can have the greatest positive impact on the quality of instruction within an organization.

The inventory of skills and the personality profile presented in this document have implications for the preparation of instructors for training adults in business and industry.

The implications for vocational-technical teacher preparation that are presented here are grouped into two categories: (1) implications for recruitment and selection and (2) implications for curriculum.

Recruitment and Selection

One of the most obvious uses of the information contained in the profile developed through this project is to help with recruitment and selection decisions. The knowledge, skills, and understandings required of vocational instructors working in the private sector and the personality characteristics of instructors rated as excellent provide a partial basis for predicting the extent to which a good match is likely between the job description and the applicant. Within the private sector, the information has utility for development of job descriptions and hiring and assignment decisions. Within vocational teacher preparation programs, the information may be useful for counseling prospective and current students. In either setting, procedures such as interviews, tests, and in-basket activities can be developed to assess elements of the profile (both skills and personality traits). Within business and industrial settings, the information can also serve as the basis for evaluation of current trainers as well as provide direction for staff development activities. Vocational teacher preparation departments can use the information for assessing student progress toward completion of degree requirements or for internship placement.

More study is certainly needed before we can say that certain characteristics are accurate predictors of instructor excellence. For example, do poor trainers have different characteristics than those identified as exemplary? Can individuals with other characteristics also be excellent instructors?

Both descriptive and experimental studies are needed to identify the distinguishing behaviors of high performing private sector instructors. What are the threshold competencies reflected by both average and exemplary performers? What are the discrete competencies which distinguish exemplary performers in the job of classroom instructor within business and industrial settings? Which threshold competencies are necessary yet insufficient qualities for high performance as an instructor in business and industry?

Predictive studies are needed to determine the likelihood of success for individuals pursuing careers as vocational instructors in business and industrial settings and for determining what factors relate to excellence. Competencies and traits that characterize exemplary vocational instructors differ in the degree that they can be developed. Some traits can be developed almost entirely from scratch, while others would be more difficult to develop since they require an extensive foundation of prerequisite understandings and experiences. Such belief suggests some practical limitations on our ability to develop particular individuals for the role of vocational instructor in either a school or nonschool setting. There is a need to identify which of these factors can be developed in individuals and which educational activities cause these factors to emerge. These factors can then serve as the basis for curriculum and learning activities designed to prepare students for such positions. Those factors that are extremely difficult if not impossible to develop can be used primarily to assist with recruitment and selection decisions. A possible conclusion one could draw from results of this study is that we should invest in screening mechanisms to screen applicants vis-a-vis the personality characteristics identified as necessary yet extremely difficult to develop in training programs. Training can be provided which focuses on those understandings, skills, and traits which are more easily developed.

Particularly, given the need today for vocational instructors to be innovative and to challenge the traditions of the past, it may be better to select individuals who already have many strengths which are difficult to develop (at least in the short term) than to select those who do not distinguish themselves on the majority of these factors.

Curriculum

According to the personality profile presented in this document, excellent vocational instructors are more alike than different regardless of the setting in which they work. In addition, the literature reviewed suggests that there is a great deal of commonality among the pedagogical knowledge and skills required in both school and business settings. A comparison of competencies identified as essential for instructors in either setting yields similarities regarding planning, instructional organization and development, presentation of subject matter, and communication. However, there appear to be two rather obvious but significant differences. First is the necessity for understanding and for dealing effectively with differences between adults and adolescents in the learning situation. Second is the

necessity for understanding the context of the work environment. Vocational teacher preparation programs have traditionally prepared students for the school environment, either at the secondary or postsecondary levels. However, vocational instructors working in the private sector need to possess a working understanding of business principles and the culture associated with the profit motive in most businesses.

Some researchers and practitioners have condemned the idea of developing a rigid list of proficiencies upon which to base a teacher preparation curriculum. For example, McNeil (1988) charged that rigid adherence to a list of proficiencies or skills results in a "dumbing down" of the teacher education curriculum. Ornstein (1985) cautioned that claims about the effects of discrete teacher behaviors on student outcomes must be made "in context." Certainly, the more unique the situational context, the more unique the required instructor characteristics and skills. A single, universally valid theory of instructor excellence (i.e., a theory which can account for a substantial amount of effectiveness variation across contexts) might have to contain a large number of variables. It appears that the preparation of vocational instructors, especially for business and industrial settings, is headed less toward universal and highly global approaches and more toward complex, context specific, highly interactive models. However, outright denial that a common ground exists seems to be inefficient and counterproductive. Given increasingly limited resources, there is a limit to the amount of specialization that vocational teacher preparation programs can afford. The common pedagogical knowledge, skills, and understandings required of practitioners in either setting provide at least a core around which to build a curriculum for students preparing for positions in both school and business and industrial settings.

Given the increasing number of practitioners who are moving from one setting to another, perhaps what is needed most is to give students an opportunity to explore both settings. Graduates could be prepared to enter and/or move between business settings and secondary and postsecondary settings. The major distinction between curricula designed to prepare students for school and nonschool settings might be in how students are socialized for schools or business settings. Escalating teacher certification requirements in many states make this recommendation difficult if not unrealistic to implement in four-year programs of study. However, for those teacher preparation programs which are considering a fifth year or graduate-level option, it may be more appealing.

REFERENCES

Adams, D. A., Pratzner, F. C., Anderson, H. B., & Zimmerer, M. E. (1987). Vocational teacher education in an era of change. *Vocational Education Journal, 62*(4), 24-27.

Adamsky, R. A., & Cortrell, C. J. (1979). *Vocational teacher education: A review of the research.* Columbus: National Center for Research in Vocational Education, Ohio State University.

Ahadi, S. A. (1990). *The use of API career factors as Holland occupational types.* Unpublished manuscript, University of Illinois, Champaign.

American Society for Training and Development (ASTD). (1986). *Serving the new corporation.* Alexandria, VA: Author.

ASTD. (1989a). *Proceedings of the HRD Professors Network Conference of the American Society for Training and Development.* Washington, DC: Author.

ASTD. (1989b). *Training America: Learning to work for the 21st century.* Alexandria, VA: Author.

ASTD. (1990). *Put quality to work: Train America's workforce.* Alexandria, VA.

Bell, C. (1989). Malcolm. *Training and Development Journal, 43*(10), 38-43.

Braskamp, L., Brandenburg, D., & Ory, J. (1984). *Evaluating teaching effectiveness: A practical guide.* Beverly Hills, CA: Sage Publications.

Braskamp, L., & Maehr, M. L. (1987). *SPECTRUM-1: A test of adult work motivation.* Champaign, IL: MetriTech.

Bratton, B., & Hildebrand, M. (1980). Plain talk about professional certification. *Instructional Innovator, 25*(9), 22-24, 49. (ERIC Document Reproduction Service No. EJ 237 090).

Bullett, F. (1981). Why certification? *Certification registration and information.* Washington, DC: American Production and Inventory Society.

Camp, W. G. (1988). Professional development of teachers of vocational education. In M. B. Griggs, R. Jones, & A. Slocum (Eds.), *Vocational education and the Holmes Group* (pp. 145-169). Urbana: Department of Vocational and Technical Education, University of Illinois at Urbana.

Carnegie Task Force on Teaching as a Profession. (1986). *A nation prepared: Teachers for the 21st century.* Washington, DC: Carnegie Forum on Education and the Economy.

Carnevale, A. P., & Gainer, L. J. (1989). *The learning enterprise* (Grant No. 99-6-0705-75-079-02). Alexandria, VA: American Society for Training and Development and the U.S. Department of Labor.

Cattell, R. B., Eber, H. W., & Tatsuoka, M. M. (1970). *Handbook for the sixteen personality factor questionnaire (16PF).* Champaign, IL: IPAT.

Civil Service Commission, Bureau of Training. (1976). *The EDS curriculum plan: An outline of learning experiences for the employee development specialist.* Washington, DC: Author (Training Leadership Division).

Commission of Professors of Adult Education. (1961). *Adult education: A new imperative for our times.* Washington, DC: Adult Education Association of the U.S.A.

Costa, P. T., & McCrae, R. R. (1985). *The NEO personality inventory manual.* Odessa, FL: Psychological Assessment Resources.

Craig, R. (Ed.). (1976). *Training and Development Handbook.* New York, NY: McGraw-Hill.

David, H. (1983). A summing up. In H. David, H. F. Hjelm, & R. C. Harris (Eds.), *Vocational education research in the 1980s* (pp. 140-146). Bloomington:

American Vocational Education Research Association in cooperation with the Indiana University Publication Office.

Doyle, K. O. (1983). *Evaluating teaching*. Lexington, MA: Lexington Books, D. C. Heath.

Dunkin, J. J., & Biddle, B. J. (1974). *The study of teaching*. New York, NY: Holt, Rinehart, and Winston.

Eble, K. E. (1976). *The craft of teaching*. San Francisco, CA: Jossey-Bass.

Evans, R. E. (1982). The role of the federal government in vocational education. In *A vocational education policy for the 1980s* (policy pamplet) (pp. 6-24). Washington, DC: National Council on Employment Policy.

Feuer, D. (1988). Training budgets. *Training*, *25*(10), 64-70.

Fournies, F., & Associates. (1983). *Performance appraisal manual.* San Francisco, CA: Author.

Galbraith, M., & Gilley, J. (1986). *Professional certification: Implications for adult education and HRD* (Information Series No. 307). Columbus: National Center for Research in Vocational Education, Ohio State University.

Gilley, J., & Galbraith, M. (1986). Examining professional certification. *Training and Development Journal*, *40*(6), 60-61.

Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2) (pp. 141-165). Beverly Hills, CA: Sage Publications.

Goldstein, I. (1980). Training in work organizations. *Annual Review of Psychology*, *31*, 229-272.

Gordon, J. (1986). Where the training goes. *Training*, *23*(10), 49-62.

Gordon, J. (1991). Training budgets: Recession takes a bite. *Training*, *28*(10), 37-46.

Griggs, M. B., & Burnham, C. (1988). The knowledge base for the redesign of vocational teacher education. In University Council for Vocational Education, *Beyond the debate: Perspectives on the preparation of vocational education teachers* (pp. 66-81). Macomb, IL: Curriculum Publications Clearinghouse.

Grossman, P. L., & Richert, A. E. (1988). Unacknowledged knowledge growth: A reexamination of the effects of teacher education. *Teaching and Teacher Education*, *4*(1), 53-62.

Hatcher, T. F. (1974). Professional development opportunities for trainers. *Training and Development Journal*, *28*(1), 8-11.

Hjelm, H. F. (1983). Preface. In H. David, H. F. Hjelm, & R. C. Harris (Eds.), *Vocational education research in the 1980s* (pp. iii-iv). Bloomington: American Vocational Education Research Association in cooperation with the Indiana University Publications Office.

Holmes Group. (1986). *Tomorrow's teachers: A report of the Holmes Group*. East Lansing, MI: Author.

International Board of Standards for Training, Performance, and Instruction (IBSTPI). (1986). *Instructional design competencies: The standards*. Evergreen, CO: Author.

IBSTPI. (1988). *Instructor competencies: The standards* (Vol. 1). Evergreen, CO: Author.

Irby, D. M. (1978). Clinical faculty development. In L. Ford (Ed.), *Clinical education for the allied health professions*. St. Louis, MO: C. V. Mosby.

Jacobs, R. L. (1987). *Human performance technology: A systems-based field for the training and development profession* (Information Series No. 326). Columbus:

ERIC Clearinghouse on Adult, Career, and Vocational Education; National Center for Research in Vocational Education, Ohio State University.

Jacques, E. (1987, November). Address to Adult Education and Human Resource Development students, University of Texas, Austin.

Jensen, G., Liveright, A., & Hallenbeck, W. (Eds.). (1964). *Adult education: Outlines of an emerging field of university study*. Washington, DC: Adult Education Association of the U.S.A.

Jones, D. W. (1988). Assessing the knowledge base in teacher education: A fundamental and necessary task. *Teacher Education Quarterly, 15*(2), 20-31.

Knowles, M. (1980). *The modern practice of adult education*. New York, NY: Cambridge, the Adult Education Company.

Knox, A. (1979). *Enhancing proficiencies of continuing educators*. San Francisco, CA: Jossey-Bass.

Krug, S. E. (1985). *TEST PLUS: A microcomputer based system for the Adult Personality Inventory*. Champaign, IL: MetriTech.

Krug, S. E., & Johns, E. F. (1986). A large scale cross-validation of second-order personality structure defined by the 16PF. *Psychological Reports, 59*, 683-693.

Krug, S. E. (1991). The Adult Personality Inventory. *Journal of Counseling and Development, 69*(3), 266-271.

Laird, D. (1985). *Approaches to training and development*. Reading, MA: Addison-Wesley.

Leach. J. A., & Snauwaert, D. T. (1988). The place of training and development in vocational teacher education: A strategic opportunity? In University Council for Vocational Education, *Beyond the debate: Perspectives on the preparation of*

vocational education teachers (pp. 103-113). Macomb, IL: Curriculum Publications Clearinghouse.

Lee, C. (1985). Trainer's careers. *Training*, *22*(11), 75-76.

Lee, C. (1990). Industry report 1990. *Training*, *27*(10), 31-45.

Liveright, A. (1964). The nature and aims of adult education as a field of graduate education. In G. Jensen, A. Liveright, & W. Hallenbeck (Eds.), *Adult education: Outlines of an emerging field of university study* (pp. 85-102). Washington, DC: Adult Education Association of the U.S.A.

Lynch, R. L. (1988). Influencing vocational teacher education policy through research. In University Council for Vocational Education, *Beyond the debate: Perspectives on the preparation of vocational education teachers* (pp. 114-130). Macomb, IL: Curriculum Publications Clearinghouse.

Maehr, M. L., & Braskamp, L. A. (1986). *The motivation factor: A theory of personal investment*. Champaign, IL: MetriTech.

McLagan, P. A. (Ed.). (1983). *Models for excellence: The conclusions and recommendations of the ASTD training and development competency study*. Washington, DC: American Society for Training and Development.

McLagan, P. A. (1989). Models for HRD practice. *Training and Development Journal*, *43*(9), 49-59.

McNeil, L. M. (1988). Contradictions of reform. *Phi Delta Kappan*, *69*(7), 478-485.

Nadler, L. (1970). *Developing human resources*. Houston, TX: Gulf (supported by the American Society for Training and Development).

Nadler, L. (1983). *Human resource development: The perspective of business and industry* (Information Series No. 259). Columbus: National Center for Research in Vocational Education, Ohio State University.

Nadler, L., & Wiggs, G. (1986). *Managing human resource development.* San Francisco, CA: Jossey-Bass.

Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology, 66*(6), 574-583.

Nowlen, P. (1988). *A new approach to continuing education for business and the professions: The performance model.* New York, NY: Macmillan.

Ontario Society for Training and Development. (1979). *Competency analysis for trainers: A personal planning guide.* Toronto, Ontario: Author.

Ornstein, A. C. (1985). Research on teaching: Issues and trends. *Journal of Teacher Education, 36*(6), 27-31.

Otte, F. (1987). Quoted in B. Geber, HRD degrees. *Training, 2*(7), 50.

Pace, R. (1989). The content of HRD academic program. In American Society for Training and Development, *Proceedings of the HRD Professors Network Conference of the American Society for Training and Development* (pp. 82-86). Washington, DC: American Society for Training and Development.

Pace, R., Peterson, B. D., & Porter, W. M. (1986). Competency-based curricula. *Training and Development Journal, 40*(3), 71-78.

Palmer, T. (1989). Developing university training programs to meet business needs. In American Society for Training and Development, *Proceedings of the HRD Professors Network Conference of the American Society for Training and Development* (pp. 6-11). Washington DC: American Society for Training and Development.

Phelps, A. L., & Hughes, R. P. (1986). The unfinished agenda: Some implications for research in secondary vocational education. *Journal of Vocational Education Research, 11*(2), 51-72.

Pinto, P., & Walker, J. (1978). What do training and development professionals really do? *Training and Development Journal, 32*(7) 58-64.

Pratzner, F. C. (1985). The vocational education paradigm: Adjustment, replacement, or extinction. *Journal of Industrial Teacher Education, 22*(2), 6-19.

Scheer, W. E. (1964). Is personnel management a profession? *Personnel Journal, 43*(5), 225-261.

Seidman, P. F. (1986). Where we've been in vocational education research and development: A "geological" survey. *Journal of Vocational Education Research, 11*(4), 43-61.

Seldin, P. (1980). *Successful faculty evaluation programs: A practical guide to improve faculty performance and promotion/tenure decisions.* Crugers, NY: Coventry Press.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-22.

Smith, B. O. (1985). Research bases for teacher education. *Phi Delta Kappan, 66*(10), 685-690.

Tozer, S., & Nelson, R. (1988). Vocational teacher education: Emerging patterns for general studies, academic majors, and professional education. In University Council for Vocational Education, *Beyond the debate: Perspectives on the preparation of vocational education teachers* (pp. 18-37). Macomb, IL: Curriculum Publications Clearinghouse.

Tyler, R. W. (1985). What we've learned from past studies of teacher education. *Phi Delta Kappan, 66*(10), 682-684.

Venable, W. R. (1985, November). *Academic programs in HRD.* Paper presented at the National Adult Education Conference of the American Association of Adult and Continuing Education, Milwaukee, WI.

Warzynski, C., & Noble, D. (1976). The ideology of professionalism and HRD. *Training and Development Journal, 30*(10), 12-17.

Watkins, K. (1989). A common body of knowledge is nonsense in a field in search of itself. In American Society for Training and Development, *Proceedings of the HRD Professors Network Conference of the American Society for Training and Development* (pp. 69-74). Washington, DC: American Society for Training and Development.

Whyte, G. S. (1977, September). *The professional practitioner in the years to come.* Paper presented at the Institute of Personnel Management 21st Convention, Washington, DC.

Wirth, A. G. (1987). Contemporary work and the quality of life. In K. E. Benne & S. Tozer (Eds.), *Society as educator in an age of transition* (pp. 54-87). Chicago, IL: National Society for the Study of Education.

Wotruba, T. R., & Wright, P. L. (1975). How to develop a teacher rating instrument: A research approach. *Journal of Higher Education, 46*(6), 653-663.